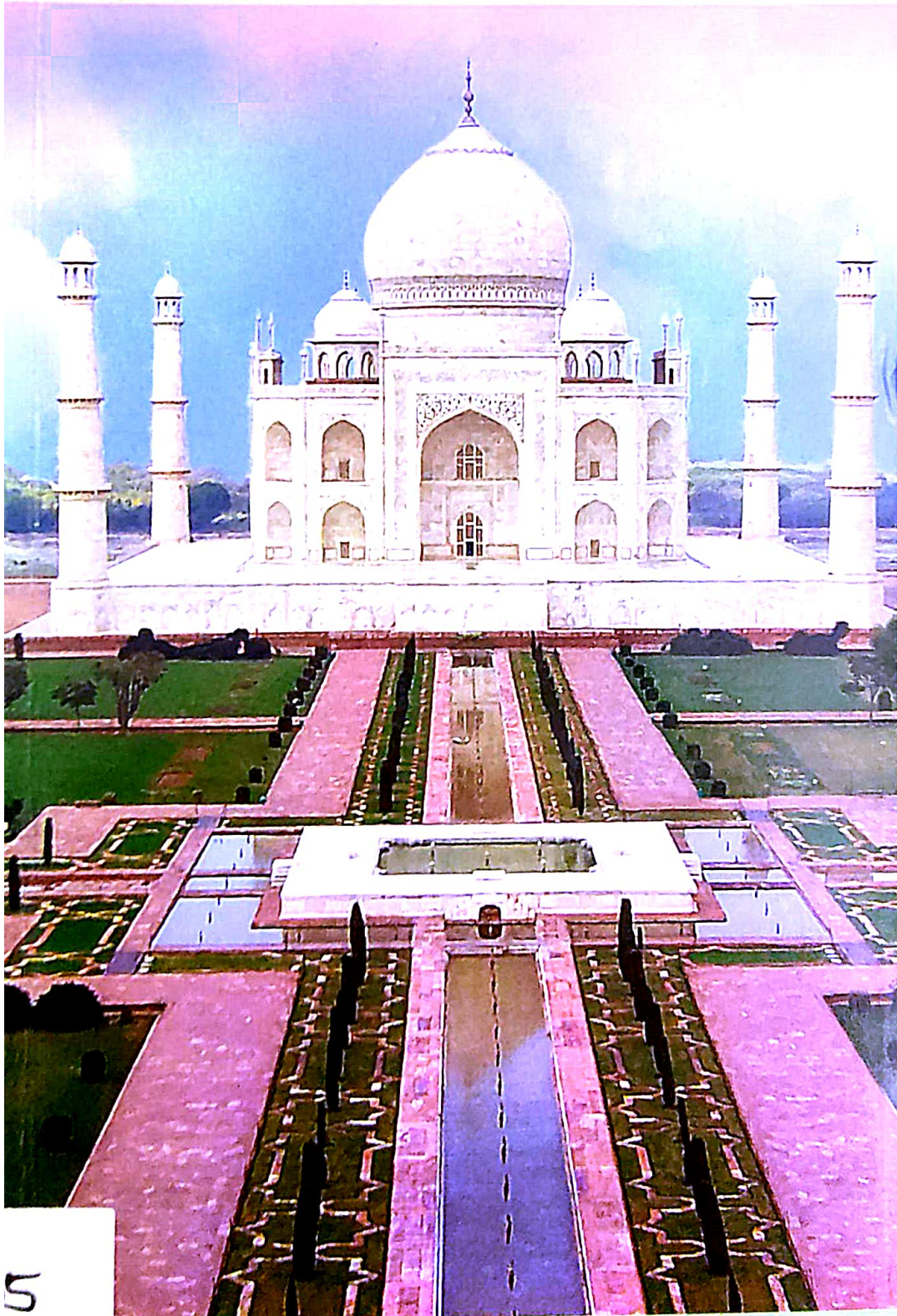


World Heritage Series

13005

Taj Mahal



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ARCHAEOLOGICAL SURVEY OF INDIA

Taj Mahal

The Taj Mahal is considered the finest example of Mughal architecture, a style that combines elements from Persian and Islamic architectural styles. In 1983, the Taj Mahal became a UNESCO World Heritage Site and was cited as 'the jewel of Islamic art and one of the universally admired masterpieces of the world's heritage.'

The Taj is the world's most well preserved and architecturally beautiful tomb. Built entirely of white marble, it uses an architectural design known as interlocking arabesque. Each element of the structure can stand on its own and integrate with the main structure. The central dome, is called the Taj. The marble walls inside the dome are covered with intricate mosaic patterns and precious stones. Within the dome lies the jewel inlaid tomb of the queen.

One of the most intriguing aspects of the Taj Mahal is the magical quality of its changing colours. The Yamuna River behind the Taj reflects light onto the white marble. Depending on the hour of the day or the season, the colours of the Taj are different. The best time to view its stunning beauty is at dawn or sunset.





Location of the Taj Mahal within India

Sketch map. Not to scale



World Heritage Series

Taj Mahal

13005

Dr. W. H. Siddiqi

Former Director

Archaeological Survey of India



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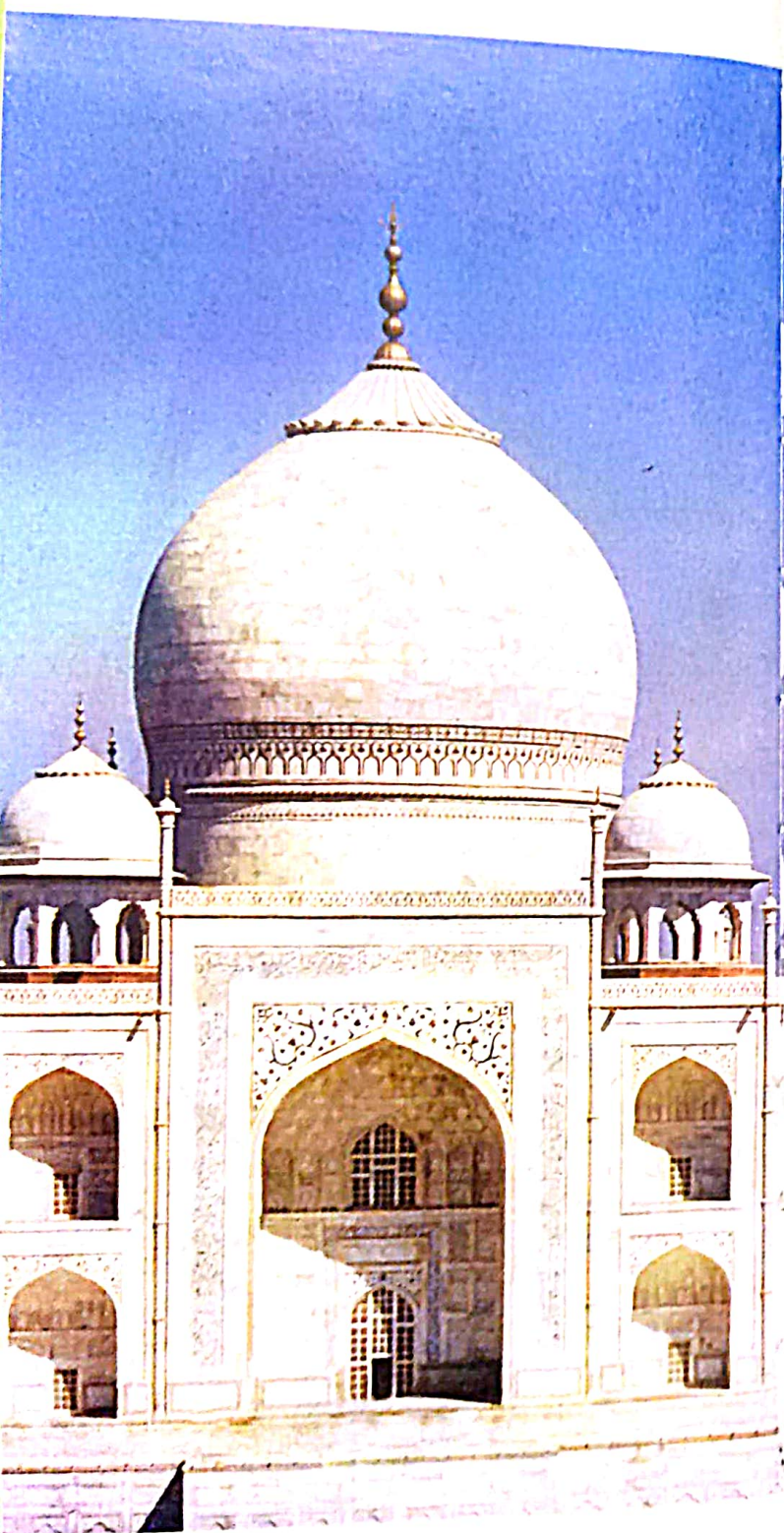
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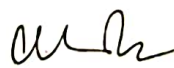


Foreword

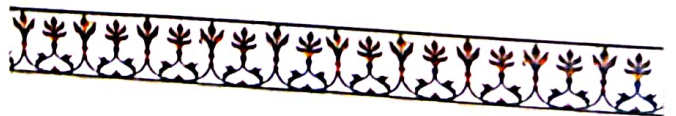
The Taj Mahal is a unique architectural achievement of the world. This world famous monument was erected over the mortal remains of Arjumand Bano Begum, daughter of Khwaja Abul Hasan entitled Yaminud Daula Asaf Khan who was brother of Empress Nur Jahan and son of Mirza Ghiyas Baig Itimad-ud-daula. The most favourite queen of Shah Jahan, she received the title of Mumtaz Mahal after her marriage to Shah Jahan.

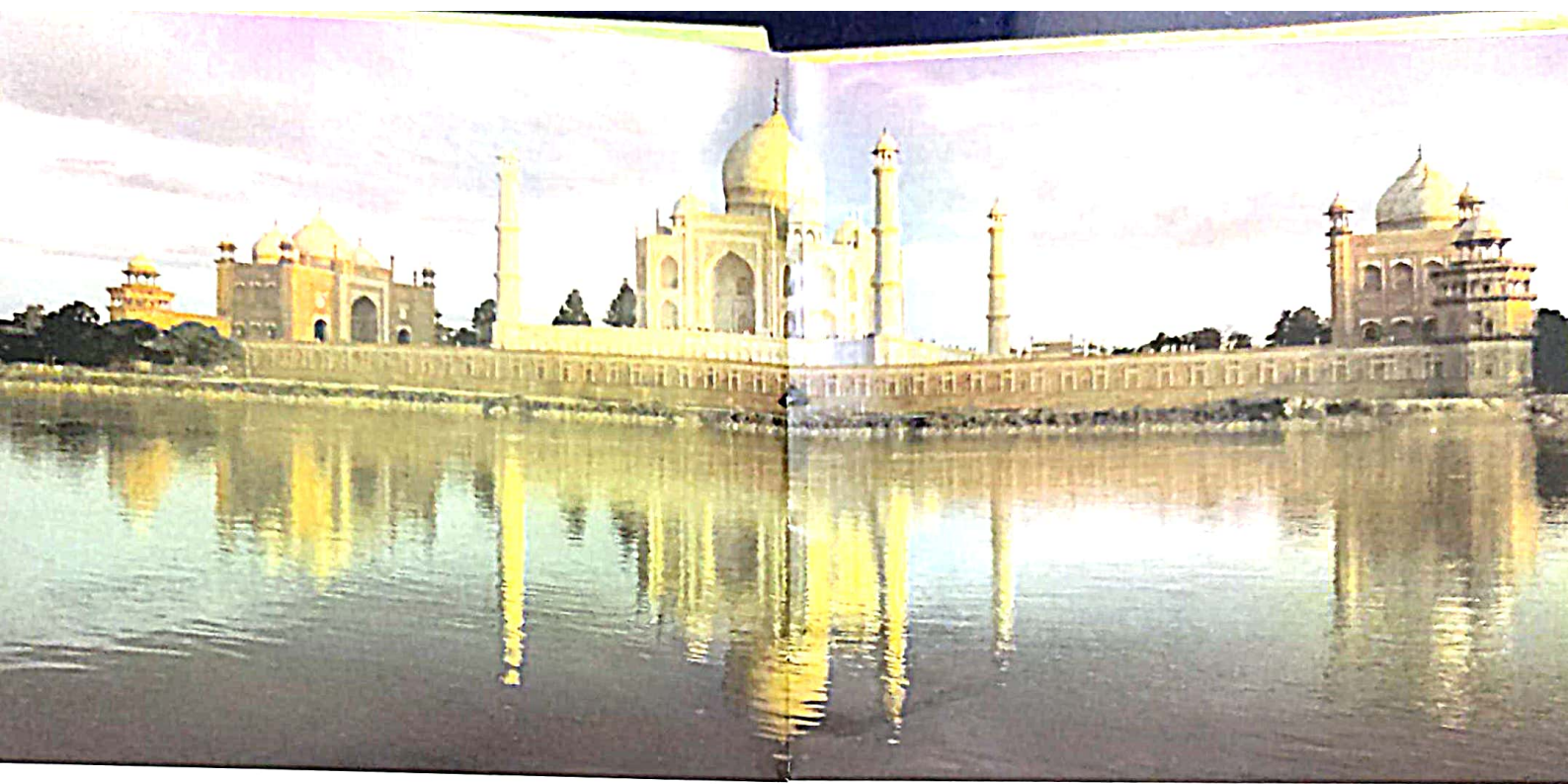
What is even more striking is that Emperor Shah Jahan raised this grandest of all the Mughal Mausoleums for a woman, his favourite wife, Mumtaz Mahal, the chosen one of the palace. This romantic aspect which defies all general ideas about the position of women in Mughal society has long appealed to visitors. To enjoy the site of the Mausoleum of Mumtaz Mahal, tourists from the world over come to visit it in millions, throughout the year.

Its perfect aesthetics reflects the pure sentiments and excellence in all aspects. The Taj Mahal is Shah Jahan's great contribution to world architecture, and, as contemporary sources reveal, it was conceived as such from the very beginning. In the words of Shah Jahan's historian Qazwini "the building would be a masterpiece for the ages to come, increasing the amazement of humanity." It was to be a magnificent burial place for Mumtaz Mahal, an image here on earth of the heavenly mansion prepared for her in paradise, but also until the day of resurrection, it was to testify to the power and glory of Shah Jahan and the Mughal rule.



K.N. Shrivastava
Director General
Archaeological Survey of India



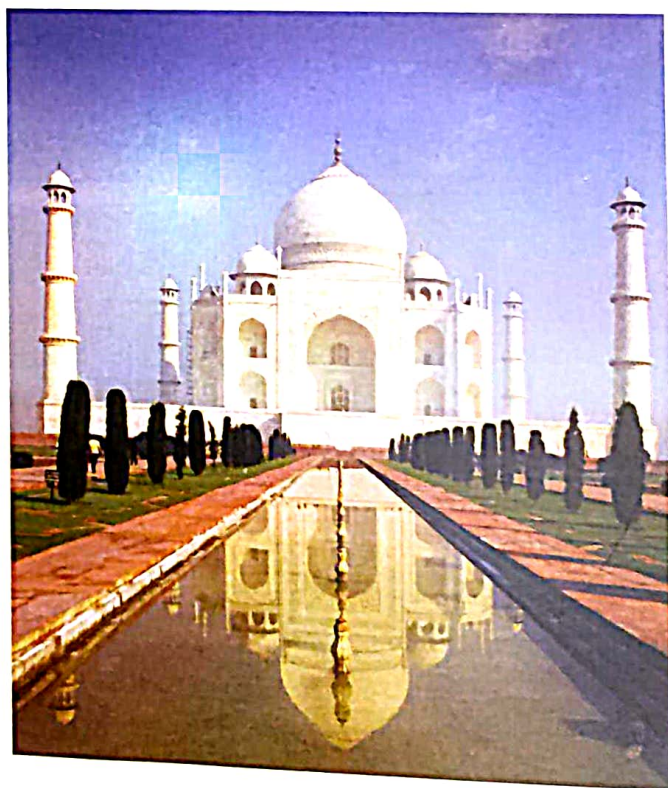


Taj Mahal

Taj Mahal, India's most famous architectural wonder stands on the bank of River Yamuna, adorning the sky line of Agra. It was built by the fifth Mughal Emperor, Shah Jahan in memory of his second wife, Mumtaz Mahal, a Muslim Persian Princess.

The construction of this fine marble tomb began in 1631 and was completed in seventeen years. It is said that twenty thousand workmen, worked day and night to complete it. The material was brought in from all over India and Central Asia. The architecture and its adornments are linked to the passion of eternal love that inspired it.

The beauty of the Taj Mahal lies in its perfect proportions. The octagonal structure is topped by a fine dome and balanced by four tapering minarets at the edge of the platform. Within the dome lies the jewel-inlaid Cenotaph of the Queen. Standing in a beautiful garden embellished with waterways and fountains the garden tomb is framed by sandstone walls and tall gateways. The exquisite workmanship of the Taj has been described as "having been designed by giants and finished by jewellers".





History of Agra City

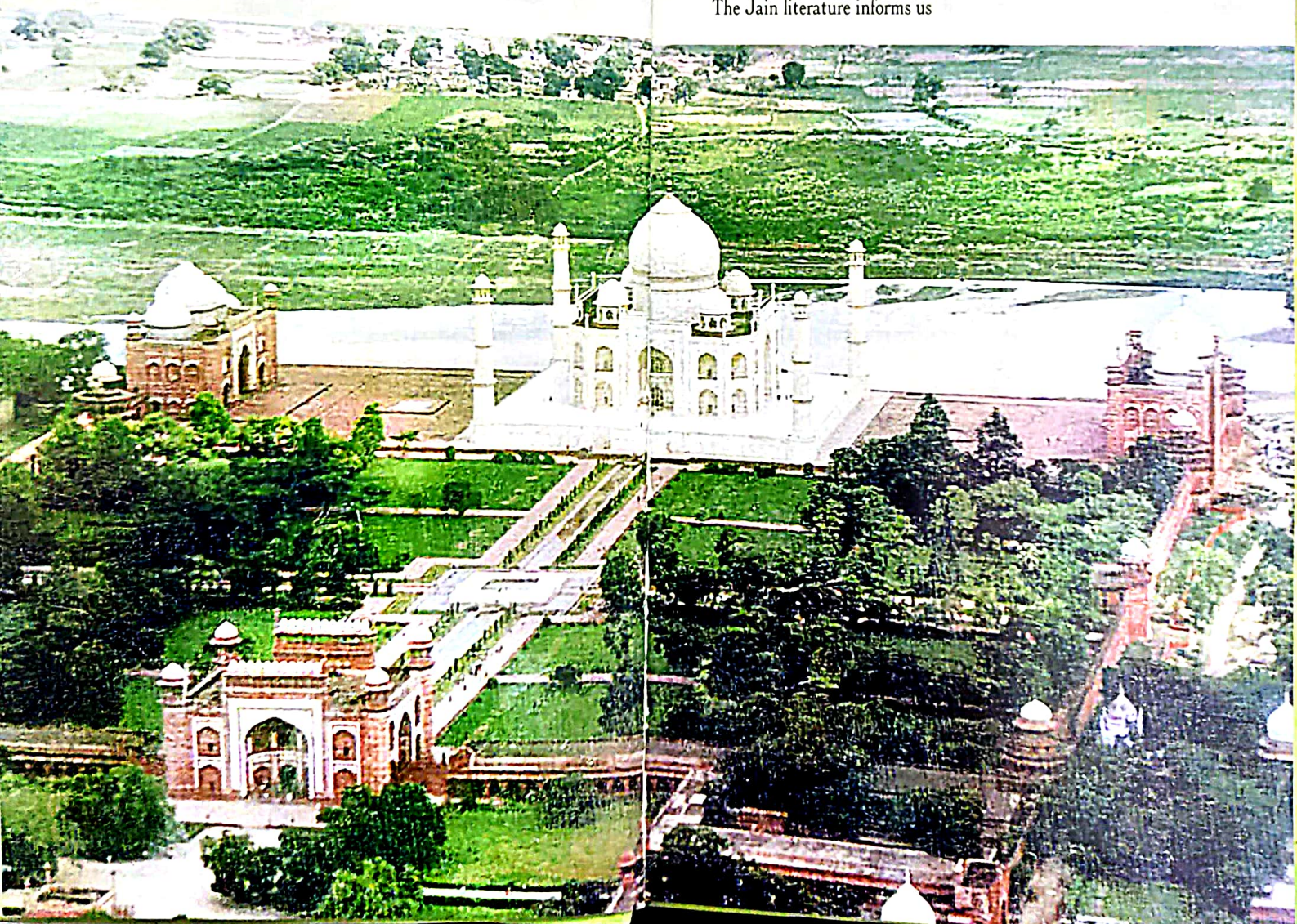
Agra and its neighbourhood abound in prehistoric sites which testify to the activities of the prehistoric man in the area. Explorations also discovered many painted Grey Ware sites and some of them yielded Northern Black Polished Ware

along with Painted Grey Ware. Painted Grey Ware culture has been scientifically dated 1000 B.C. onwards and has been associated with the people of Mahabharata by Professor B.B. Lal the famous archaeologist.

It is interesting to know in this connection that certain localities in Agra city have the name of Raja Kans of Mathura associated with them. He is reported to have built a prison there in which he confined enemies of his kingdom. An early reference to the place is found in the celebrated epic Mahabharata which mentions it as Agravan, Jungle of Agra, during the time of Raja Kans. The Jain literature informs us

that Neminatha the twenty second Jain Tirthankara who was the son of Shivdevi and Samadravijaya and the elder brother of Vasudeva, Krishna's father, was born in Shauripur. This is why Bateshwar has been a place of pilgrimage for the Jains since very early times.

This region has been rich in sculptural wealth due to its close proximity with Mathura.



The first recorded mention of the Agra city, and of an ancient fortress in it, is contained in a *Qasida* composed in praise of the Ghaznavid Prince Mahmud, son of Ibrahim by the poet Mas'ud bin Sa'd bin Salman where in the conquest of the fortress during the reign of Sultan Mas'ud III, (493-508 / 1099-1115) is mentioned. The description of the ancient fortress of Agra contained in the poem reads: "The fort of Agra is built amidst the sand like a hill and the battlements of it are like hillocks. Emperor Jahangir in his Memoirs, confirms the fact that Agra enjoyed a continuous history. "Before the rule of the Lodi Afghans, Agra was a great and populous place, and had a castle described by Mas'ud Sa'd Salman."

The town was ruled by Rajput Chiefs, who, upon making their submission to the Sultanate of Delhi were allowed to keep their control over it, under the overall command of the Governor of Bayana Province. Akbar erected his fortress, palaces, houses of nobility, gardens, mosques, schools, and markets etc. The Mughals had also erected buildings on other side of the river and the site now called Mehtab Bagh was evidently a large Mughal garden having pleasure pavilions, hammams, tanks, water channels and fountains whose remains were exposed by the flood of September 1978. The same has been confirmed by excavation in 1979. That Shah Jahan may have desired to be buried in his own garden opposite Taj Mahal cannot altogether be ruled out.



Old lamp in front of the Main Gate

The strategic position of Agra and its neighbouring areas were fully appreciated by Sultan Sikandar Lodi who decided to establish the headquarters of his government at Agra. It may be interesting to read what the Afghan historian Nimat-Ullah who records the circumstances leading to the foundation of a new city at Agra by Sikander Lodi in 1505 A.D.

After the natural calamity of a severe earthquake to the new city, Sultan Sikandar seems to have encouraged building activity again and Agra soon became a flourishing town. Music was specially favoured.

Sultan Sikandar Lodi died at Agra on 14th December 1517 A.D. and was succeeded by his son Ibrahim. Sikandar's dead body was taken to Delhi where it was buried into the tomb built by him in his life time in Jor Bagh.

The Agra fort was completed in 1573 at the cost of 35,00,000 rupees, in eight years under the supervision of Qasim Khan, the Chief Engineer. About four thousand skilled masons were employed. It is the most imposing monument, nearly semi-circular on plan, extending about 0.80 km along the river and a circumference of not less than 2.4 km. A unique socio-cultural infrastructure of

the city emerged here and at the turn of the sixteenth century, it was so populous that it was considered much greater than the city of London. The city plan was clearly demarcated into different zones. These zones were meant for several specific uses.

The heart of the city was served with a net-work of streets and chowks, with commercial manufacturing establishments and residential complexes of the merchants, shopkeepers, workers and artisans besides mosques, temples, colleges, schools, public hammams etc.

Agra was in existence before the advent of the Mughals. It was Emperor Akbar who took keen interest in its systematic and developed town planning so that it became a 'model city' of the Mughals in the sixteenth century.

The growth of Agra city was remarkable in that some new localities grew up and became self sufficient with regard to the needs of the residents and visitors alike. It had its large extension along the west bank of Yamuna both northwards and southwards which were predominantly occupied by the imposing *havelis* (mansions) of the nobility of Jahangir and Shah Jahan.





Shahjahan



Portrait of Shah Jahan

The Emperor Jahangir had four sons, each born of a different queen. Even more than those of the earlier two sons, the arrival of the third was attended by lavish celebrations, festivities and fireworks consistent with

Mughal pomp, not only at Lahore and Agra but also throughout the Empire. Akbar was delighted with his new grandson mainly because it would bring renewed consolation to his barren queen, Sultana

Ruqaiya Begum, whom the court astrologers earlier counselled to adopt the little babe.

Six days later, Jahangir requested his father to give the new Prince a name. The little Prince was named Khurram, meaning "the joyous" on the performance of the Hindu *chhati* ceremony according to Rajput tradition. The little Prince in the arms of his mother Princess Jagat Gosain (whom Jahangir lovingly called "Jodhbai" as she hailed from Jodhpur) was the cynosure of all eyes.

The court astrologers, considering the zodiacal sign of Libra under which the Prince was born, foretold a great future for Khurram, which gladdened the heart of his grandfather so much that Akbar adopted him as his own son, placing him under the tender and loving care of Sultana Ruqaiya Begum. Khurram grew up in the Emperor's palace. He was a favourite with Akbar, who could not conceal his pride and pleasure when he observed that Khurram exhibited promise of future greatness. At the age of four years, four months and four days, Khurram underwent the circumcision ceremony, with the usual festivities and customs.

As soon as he was able to discern things around him,

Khurram commenced his education under the charge of special tutors at the court, especially Mulla Qasim Beg Tabrizi, Shaikh Abul Khair, Shaikh Sufi, and Hakim Ali Gilani (also called Dawai). Although there was no dearth of literary teachers, from the very beginning Khurram exhibited a decided preference for more practical pursuits.

In October 1605, when the Great Mughal lay on his death bed, Khurram declined to leave his bedside, oblivious of the explosive atmosphere in which the Grandees supported his eldest brother Khurrau's candidature to the throne, a type of situation when it was not unusual in Oriental Courts for prospective claimants to be put out of the way. Unmindful of the dangers, which might result thereof, Khurram struck bravely to his post despite his mother's entreaties to quit the palace. In fact, he stayed by the side of Akbar till he breathed his last and his father ascended the Mughal throne a week later as Emperor Jahangir on October 27, 1605.

While Jahangir held his Imperial court at Lahore, he got Khurram betrothed to Arjumand Bano Begum, the dazzling thirteen year old daughter of Nawab Abul Hasan entitled Asaf



Khan Yamin-ud-daula and grand-daughter of Itima-dud-daula. The occasion was celebrated with usual Mughal pomp. Jahangir himself held the dainty hand of his prospective daughter-in-law to put the ring on her finger, towards the end of March 1607.

Despite his tender age, the studious Khurram had great inclination to master the art of warfare, already exhibiting his ability as a military strategist. In early 1607, when he was with his father at Lahore, Khurram was granted on March 21, his first military rank of 8000 *zat* (personal rank) and 5000 *sawar* (horse) along with his drums and flag.

Recognising these qualities in Khurram, Jahangir assigned him in November 1608 the *Sarkar* of Hissar Firoza, then a disturbed region, and a *Jagir* in Ujjain. Jahangir also placed the *Mohar Uzak* in Khurram's custody, commanding that this regal seal should be fixed on all *farmans* (edicts) and *parwanas* (news). Knowledgeable grandees realised that this appointment was virtually Jahangir's proclamation that the Emperor had designated this illustrious son to succeed him to the throne, also evident from the fact that Jahangir allowed Khurram the privilege of pitching a red tent which Mughals normally bestowed only on the eldest son or the Crown Prince.

His bravery became very popular around 1610 A.D., during his teen age. One of the incidents of bravery was found in a hunting expedition when Jahangir was attacked by a lion and a Rajput tried to save him but was attacked by the lion.

Mirza Khurram hurriedly attacked with his sword and cut the lion in two pieces. Thus he saved the Rajput who was honoured by the title of *Ani Rai Sahib Dilan*.

It is curious to recount that by a strange turn of fate Shah

Jahan had to come again to Burhanpur, the place of Khusrau's demise, about ten years later, when Mumtaz Mahal passed away in June 1631 to be temporarily buried probably in the same garden along the bank of the river Tapti.



Weighing ceremony of Sahazada Khurram



Mumtaz Mahal



Portrait of Arjumand Bano Begum entitled Mumtaz Mahal

The most outstanding woman in the entire Mughal history, was Arjumand Bano Begum, more well known as Mumtaz Mahal. The life and career of this remarkable lady is indeed one of the most fascinating narratives of the Mughal era. As the favourite Queen of Shah Jahan and by her calm, engaging and mild disposition she engrossed his whole affection and held him under her spell

throughout their wedded life. Their conjugal love finds no parallel in the annals of romance.

Arjumand Bano Begum was born on April 27, 1593, thus younger than Shah Jahan (then Prince Khurram, born on January 5, 1592) by over fifteen months. She was the daughter of Nawab Asaf Khan by Diwanji Begum, and was born at Lahore where Akbar's court then was.

Though born with a silver spoon in her mouth, Arjumand was a courteous child by nature, and the doted daughter who passed her childhood at Lahore, Agra and other places whither her parents went. An intelligent child, she imbibed the good things of life in her parent's home, which could not escape the influence of the grandeur of the Great Mughal's Court next door. Since the families of that most powerful Mughal courtier, Itimad-ud-daula, and his son Asaf Khan, who later was entitled Yaminuddaula ("Right Arm of Realm") had free and easy access to and close relations with the court, it is more than probable that Arjumand visited the harem apartments, where she came in contact with the other children of royal and noble parentage. And it is quite possible that Arjumand and Prince Khurram played together in their tender age.

It was an established custom of the era that when females attained puberty, they receded behind the veil of seclusion (*purdah*), but there were exceptions in this regard, for example, popular games and *Meena Bazaars* (Fancy Fairs), when Princes and Princesses mixed freely. But whether

daughters of Nobles could be included in the category of Princesses is a matter of contention, because the Royal family of the Mughals generally deemed themselves head and shoulders above the Nobles. However, it is interesting to record that the *Meena Bazaar* was where the Emperor personally ascertained news and views, and gathered intelligence (through gossip overheard) about the conditions of life and general situation in his domains, as also to see the bewitching beauties attending the festivities.

Just as Arjumand Bano entered teenage, she gave promise of blossoming into a rosy-cheeked pastel shade beauty of Persian vintage. Jahangir, a connoisseur of feminine charm, probably had a glimpse of her at one of the sessions of the *Meena Bazaar* at the Agra Fort or in the palace of Asaf Khan which the Emperor graced by his presence on certain festive occasions. By the time she was fourteen, news of her magnetic beauty, exquisite charm, elegant deportment, and poise spread far and wide. Jahangir, who had since succeeded his father in 1605, singled her out as a prospective wife for his favourite son, Sultan Khurram.

Tender hearted by nature, lady of the Taj, Mumtaz Mahal used her influence over her royal husband for the benefit of the poor and the needy, particularly widows and orphans, arranging marriages at her or State expense of girls of destitute or deserving parents or orphans. She also granted land. A hukmnama (order of hers) of land grant issued with her own seal is presumed in District Dhule, Maharashtra.



Stucco painted ceiling of Mehtab Bagh

And so it came to pass that the team of artists, builders, craftsmen, calligraphers, sculptors and others combined their genius and set to work - to bring Mumtaz Mahal back to life, so to speak.



Influences on the Taj Mahal Design

Shah Jahan, whose reign is known as the Golden Age of Mughal Art and Architecture, was himself a genius in discerning art, possessing as he did the connoisseur's touch. During his life he had travelled extensively all over the Mughal Empire and had seen numerous excellent specimens of

architecture, embellished with very beautiful sculpture and ornamentation. A number of these had made an indelible impression on his mind, and therefore, when he studied

Ustad Ahmad Lahauri's design closely, making a thorough analysis of it, it was natural that the finer points of those edifices came in for consideration and comparison.

The Taj Mahal incorporates and expands on many design traditions, particularly Islamic, Persian, Hindu and earlier Mughal architecture. The overall design derived inspiration from a number of successful Timurid and Mughal buildings: these include Humayun's Tomb, Itmad-Ud-Daulah's Tomb. Under Shah Jahan's patronage, Mughal building reached new levels of refinement. Previous Mughal buildings had primarily been constructed of red sandstone; Shah Jahan promoted the use of white marble inlaid with semi-precious stones.

Tomb of Hoshang Shah, Mandu, built in 1435

It was during his rebellion that Shah Jahan took refuge in 1623 at Mandu, the "City of Joy" and admired this beautiful marble Mausoleum, square in plan and erected on a plain yet elegant marble platform, and sited in the centre of an expensive courtyard.

Tomb of Humayun, Delhi, built in 1565

Located on the western bank of the river Yamuna at Delhi, the elegant Tomb of Humayun, the great grandfather of Shah Jahan, is sited in the centre of an expansive Charbagh pattern garden (89.37 meter square) of nearly 30 acres in area, a monument which he must have seen several times even before ascending the Mughal throne in 1628.

Humayun, having spent 15 years' refuge at the Persian Court (1540-1555) could not escape its impact on him in the sphere of art and architecture, apart from Persian culture. Humayun's tomb was built by Mirak Mirza Ghiyath in 1565-1569 A.D.

Tomb of Khan-i-Khanan Abdur Rahim Khan, Delhi built in 1627 A.D

Humayun's Mausoleum, with its interesting plan and elevation, is generally accepted as the proto-type of the Taj Mahal, and quite rightly so, but it was erected about seventy years before the latter. Not many authorities realised that there was an intermediate stage to that wonder of the world at Agra until 1914 when K.A.C. Creswell asserted that the tomb of Khan-i-Khanan Abdur Rahim Khan, which is only a stone's throw from Humayun's tomb is "the real model on which the Taj Mahal was based. It resembles the Taj much more closely. The

framework being more drawn together, and its dome is practically identical in shape. The kiosks at the corners too, as also the doorways, are flush with the facade instead of being recessed, bear this out."

Shah Jahan was very familiar with Delhi monuments. The mausoleum of Khan-i-Khanan would no doubt have drawn the Emperor's attention, and its important features studied by him. Most probably Shah Jahan was impressed by four corner minarets on the outer gate of Akbar's tomb, which Shah Jahan added to the Taj Mahal.

General view of Humayun's Tomb, New Delhi





Tomb of Khan-I-Khanan Abdur Rahim Khan, Delhi

Mausoleum of Itimad-ud-daula, Agra built in Jahangir's time

Situated on the eastern bank of the river Yamuna about a mile as the crow flies to the north-east of Agra Fort, and sited in the centre of a lovely Charbagh pattern garden, 146.30 m by 137.16 m, the Mausoleum of Itimad-ud-daula is a virtual gem in architecture. It is considered an improvement on Jahangir's tomb at Lahore, because though on a lesser scale the designer succeeded in combining the various elements so remarkably proportioned as to produce an extraordinarily beautiful and well balanced edifice. It contains a central vaulted structure with a rectilinear ground floor, 21.03 m x 21.03 m, with lovely stunted octagonal minarets at its angles. A double-storeyed affair, the

upper chamber is much smaller than the one below.

The designer employed extravagant interior and exterior ornamentation, comprising Persian motifs in delicate traceries, vases, wine-cups, flowers, plants and cypresses, executed in the finest specimens of inlay in its new innovation called *pietra dura*; in this cornelian, jasper, lapis lazuli, onyx, topaz and other semi-precious stones have been used to advantage.

Beside *chikan* designs the whole scheme has been so evolved that the bewildering profusion of ornamentation does not surpass the architectural effects, one of the most entrancing views of the edifice being from the riverside, and in the ultimate, this building is an "artistic symbol of passionate filial devotion" and the high aesthetic ideals of Itimad-ud-daula.

The plan and rooms of the structure with Persian motifs vases, wine cups, flowers, guldastas, Ling temple of Shiva and canopied ride of Emperor Jahangir, besides holes near *jalis* of the doors which held double wooden doors clearly shows that this building was originally a palace of Itimad-ud-daula and after the death of his wife Asmatunnisa, was buried in the central room and became a tomb. In A.H. 1022 (A.D. 1613) Emperor Jahangir returning from his father's tomb at Sikandara stayed in the *Manzil* (Mansion) of Itimad-ud-daula on the river bank for one and half days which supports the view that the building was originally not a tomb.

When the Emperor and the Queen were proceeding to Kashmir for sight seeing. Itimad-ud-daula fell seriously ill at Kangara fort. The Emperor and the Begum Nur Jahan visited Itimad-ud-daula's house, where, shortly after he died in A.H. 1031. Itimad-ud-daula's coffin was brought to Agra and laid to rest by the side of his wife's grave. The graves are made of yellow stone. This date is also inscribed in the ceiling of the Shala Shikhar of the building. The floor is made of white marble and yellow stone in the form of a Persian carpet. This proves that the building was a place for residence earlier and only the Shala Shikhar was built by Nur Jahan in 1031 (1621-22 A.D.)



Mausoleum of Itimad-ud-daula, Agra

Transfer of the Empress's Remains from Burhanpur to Agra

Soon after the site was levelled His Majesty's messengers conveyed to the Viceroy at the capital that the late Empress's embalmed remains were to be transferred from the Zainabad Garden in Burhanpur to the site at Agra and that an appropriate spot in the proposed garden be selected for temporary burial pending the erection of her mausoleum. In deference to the above, a piece of ground measuring 5.79 m by 4.87 m was set aside in the south-east corner of the proposed Mosque, which was to be built west of the Mausoleum.

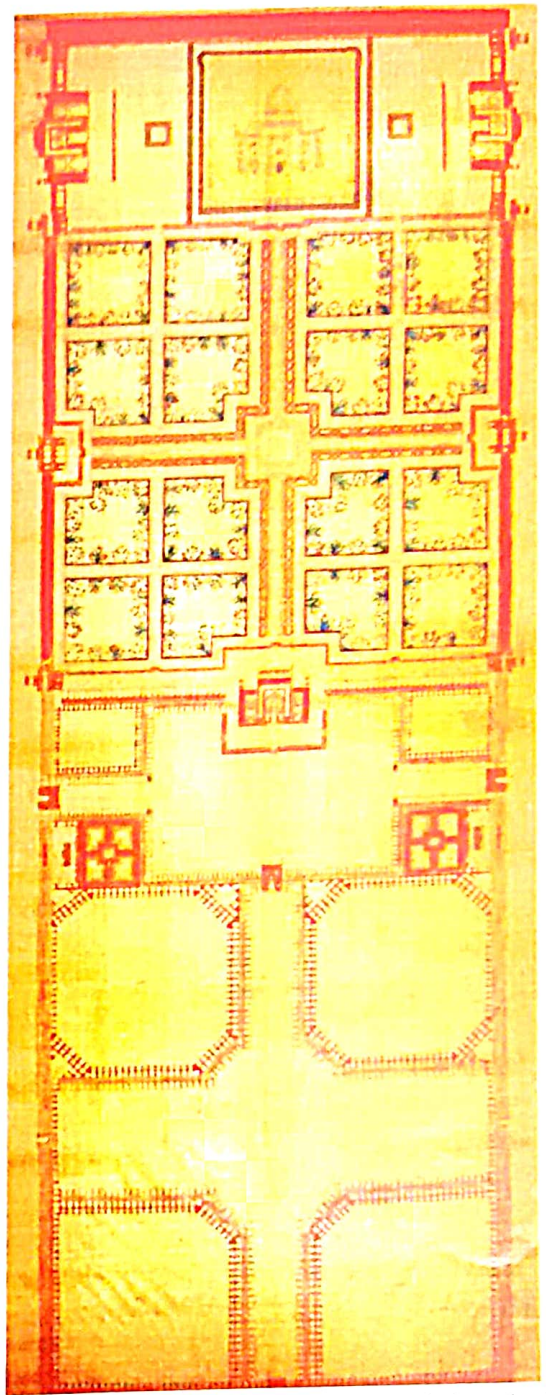
The preparations at Burhanpur for the transfer of Mumtaz Mahal's mortal remains must have received the Emperor's personal attention and made under his supervision. Attended by religious ceremonies, they were carefully exhumed and placed in a sandal-wood coffin at Zainabad Garden, whence it was brought to the royal apartments in the Badshahi Kila where it lay - probably a few days - pending its transfer to Agra.

And so it came to pass that, on the morning of Friday, 17 Jumada I, 1041 A.H. (December 12 1631 A.D.), Shah Jahan offered prayers for the soul of Mumtaz Mahal, his voice

faltering and stifled with sobs and tears. His children and Satiunnisa Khanam who was the Empress's bosom companion and now in charge of the Empress's household, and Mumtaz Mahal's parents Asaf Khan and Diwanji Begum, wept bitterly. The large gathering present comprising Ministers, Nobles and Officers were visibly moved by the solemn and sad atmosphere. The religious ceremony over, Shah Jahan asked his second son, Prince Shah Shuja, to accompany his mother's coffin to Agra.

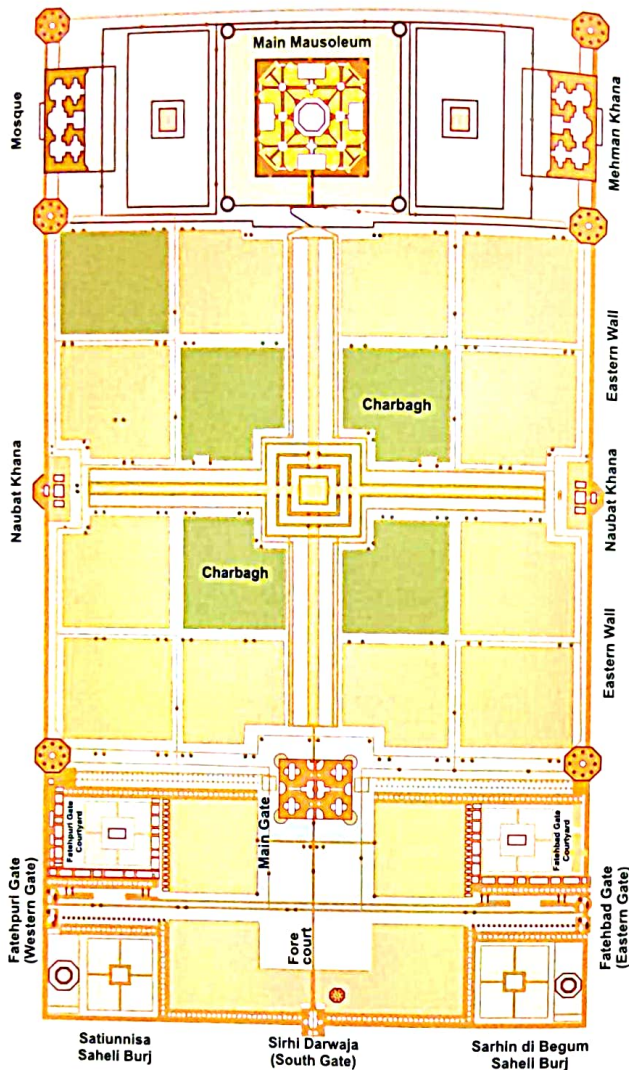
As Prince Shah Shuja was then only fifteen and a half years of age, it was natural that responsible officials should be in charge of the party escorting the late Empress' body on such a long journey from Burhanpur to Agra, as one was exposed to hazards. For this task Nawab Wazir Khan, the Physician Royal, and Satiunnisa Khanam were detailed.

The procession made its way out of the Badshahi Kila, Burhanpur, on the afternoon of December 12, 1631. Throughout the journey alms in the form of cash and food were distributed to the poor and needy from Burhanpur to Agra.



Plan of the Taj Mahal Complex, drawn by an Indian Artist, early nineteenth century.

Ground Plan of the Taj Mahal Complex



Perimeter Wall

The Perimeter Wall running north-south, which works out to 52.16 cubic meter, and both the eastern and western wall had perforce to be completed by 1042 A.H. (1633-34 A.D.).

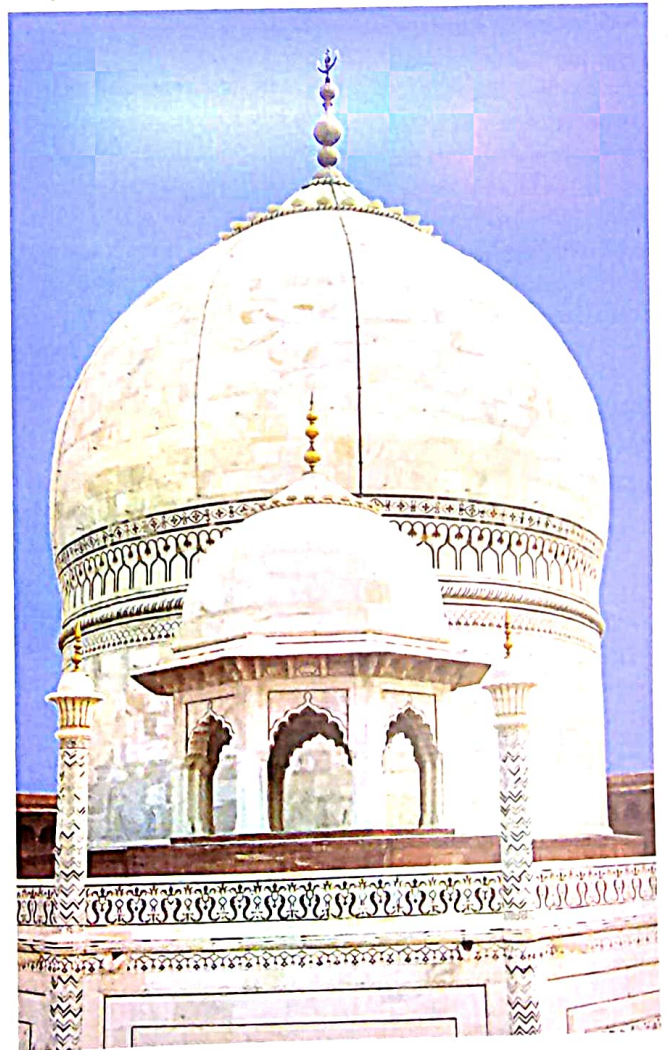
Leave alone the perimeter walls, as the core of the structure of the Mausoleum and other

components of the Taj Mahal Complex was to be built in brick, and therefore, a convenient source of material was desirable. Luckily, this was found in neighbourhood of the Taj Mahal site, where the clay was three fifths silica in content and thus quite suitable for manufacture of bricks, all hand-moulded. As the average size of

the brick was 1.98 x 1.37 x 0.46 meter, a greater quantity of mortar had to be employed due to its small dimensions. Constructed in this manner, the core of the structure was extremely strong, capable of long durability and withstanding the vicissitudes of the weather.

With the building work in progress, it would not be difficult to visualise the vast multitude of diggers, bricklayers, labourers, masons and other artisans, who numbered thousands according to the French traveller Tavernier who visited Agra not very long afterwards.

View of the Central Dome, Main Mausoleum



Arrival of Mumtaz Mahal's Remains to Agra

The Prince arrived at Agra on 16 Jumade II, 1041 A.H. (January 9, 1632) as the head of the procession, and it is logical to visualise that immediately following him were Nawab Wazir Khan and the court mourners dressed in white, Satiunnisa Khanam by the side of the bedecked coffin of her mistress atop a caparisoned elephant, and the rest of the escort party. Shah Shuja and his entourage were received in a solemn atmosphere by the dignitaries on entry into the capital, amid the showering of flowers in reverence by the populace on the mortal remains of the deceased Empress, continuing all the way to the Fort.

Foundation of the Mausoleum ready in 1632 A.D.

Contemporary chronicles confirm that "In the regnal year was laid the foundation of this towering edifice, overlooking the Yamuna River that sweeps past its northern side and far surpassing the *Saba-i-Shidad*—

seven heavens—in point of grandeur and magnificence. The foundation which were dug as deep as water level below, were rigidly filled by masons with stone and mortar and made level with the ground. Upon it was erected the tomb's base unique among buildings of this category for elegance, ornamentation and spaciousness—forming a single gigantic slab of tiles and lime plaster, measuring 341.96 m long, 128.02 m wide and 14.63 m high."

Lest these dimensions seem inconsistent with those stated earlier, it is clarified that the Shah Jahani yard was not the equivalent of the yard of 0.91 m as we know it today. It was in fact approximately 9.59 m as deduced by Colonel J.A. Hodgson in April 1840. Thus the above dimensions work out to 298.85 m, 111.59 m, 12.75 m respectively, as against those stated as 299.62 m, 111.56 m and the depth of the foundation about 13.41 m. On the river side a series of wells were excavated about 13.41 m below and the well said to be 2.74 m diameter were filled up by wood and stone masonry. Such hydraulic work foundation was never constructed before.



Construction of the Taj Mahal

Having built the stout foundation, the engineers carpeted it with a 8.84 m thick plinth called the Great Basement, its floor beautified with starlet design which is inlaid in the flooring and represents Heaven with red sandstone slabs arranged in starlet fashion. In its centre was sited the 95.40 m square base of the intended Mausoleum.

Access to these curious chambers or compartments was provided through openings situated in the Great Basement floor, by means of narrow staircases. Light and ventilation were admitted to them through perforated red sandstone screens sited not far from the aforesaid openings, and through arches pierced in the riverside wall, all closed since, except, one each at its eastern and western ends. Such an arrangement leads one to deduce that these rooms were connected to the vault, which was provided at a higher level to house the grave of Mumtaz Mahal. The purpose of those underground compartments was to provide the Emperor an easier and more private access to the Mausoleum, whenever he could come by boat from Agra Fort.

The next thing to be erected was a lofty platform 5.60 m measuring 95.43 m square with the corners cut off, it being sited

in the centre of the already mentioned red sandstone Great Basement. Considering that it contains the aforesaid vault, the platform structure was built of very strong masonry to withstand the heavy load of the Mausoleum to be erected on it as evident from the walls of as much as 10.67 m thickness at several points.

Having built the lofty platform, at whose corners provision had been made for erecting minarets, the engineers now proceeded to construct the mausoleum itself. Built on a fine symmetrical ground plan and an elevation of harmonious proportions, this lovely and lofty edifice is indeed a feat of civil engineering whose ingenuity has yet to be surpassed, when we consider that heavy masonry, especially blocks of marble each weighing anything up to a ton and perhaps more, had to be conveyed one by one to the top of the construction, which progressively rose higher and higher upto the apex of the gigantic dome. The height of the dome and the minarets gives us an idea of this difficult task which had to be executed carefully, extra caution being necessary in the case of marble to ensure that it did not get chipped or scratched on the way up.



Doubtless as the construction progressed upward, the builders initially utilised a scaffolding of wood up to a convenient height, beyond which the usual type composed of vertical and cross members lashed together, the latter acting as rungs at suitable intervals, would have created not only difficulties but also obstacles. Under such circumstances it would have become almost impracticable to transport heavy materials, and here it was where the Mughal engineers displayed their ingenuity.

They evolved a clever framework, spiral in shape, commencing from the ground in an open space probably what is now the Jilaukhana rectangle and rising in the direction of the

Mausoleum and around it like a winding pathway. It is estimated that this pathway was 7.62 m to 9.14 m broad and rose in a slope of around 1 to 50. Resting on stout pillars, this framework had a structure capable of bearing heavy loads, which were conveyed on numerous donkeys, mules, and carts drawn by oxen and camels and elephants. Suitable clearance between one spiral and another had thus to be made, and it is estimated that this spacing was 6.09 m to 7.32 m. The intention of the wide spiral platform was obviously to allow a constant two-way traffic with comparative ease.

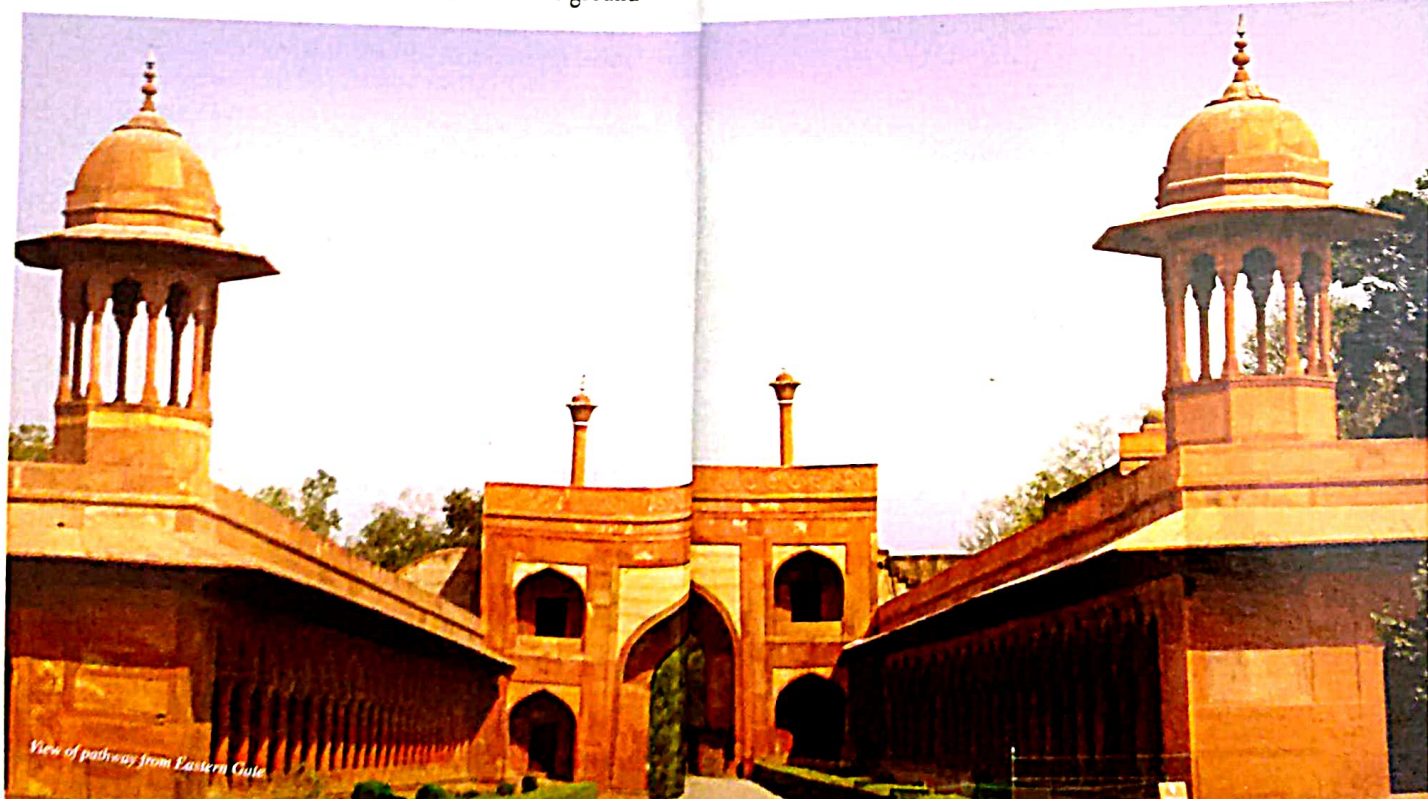
At the tail-end of the construction of the Mausoleum, the peak of the pathway was around 73.15 m above ground

level so as to facilitate the task of construction of the higher parts of the monument, especially the huge central dome. Considering a slope of 1 in 50 and a height of about 76.20 m the total length of the spiral pathway was approximately 3810 m, that is, close on 4.02 km.

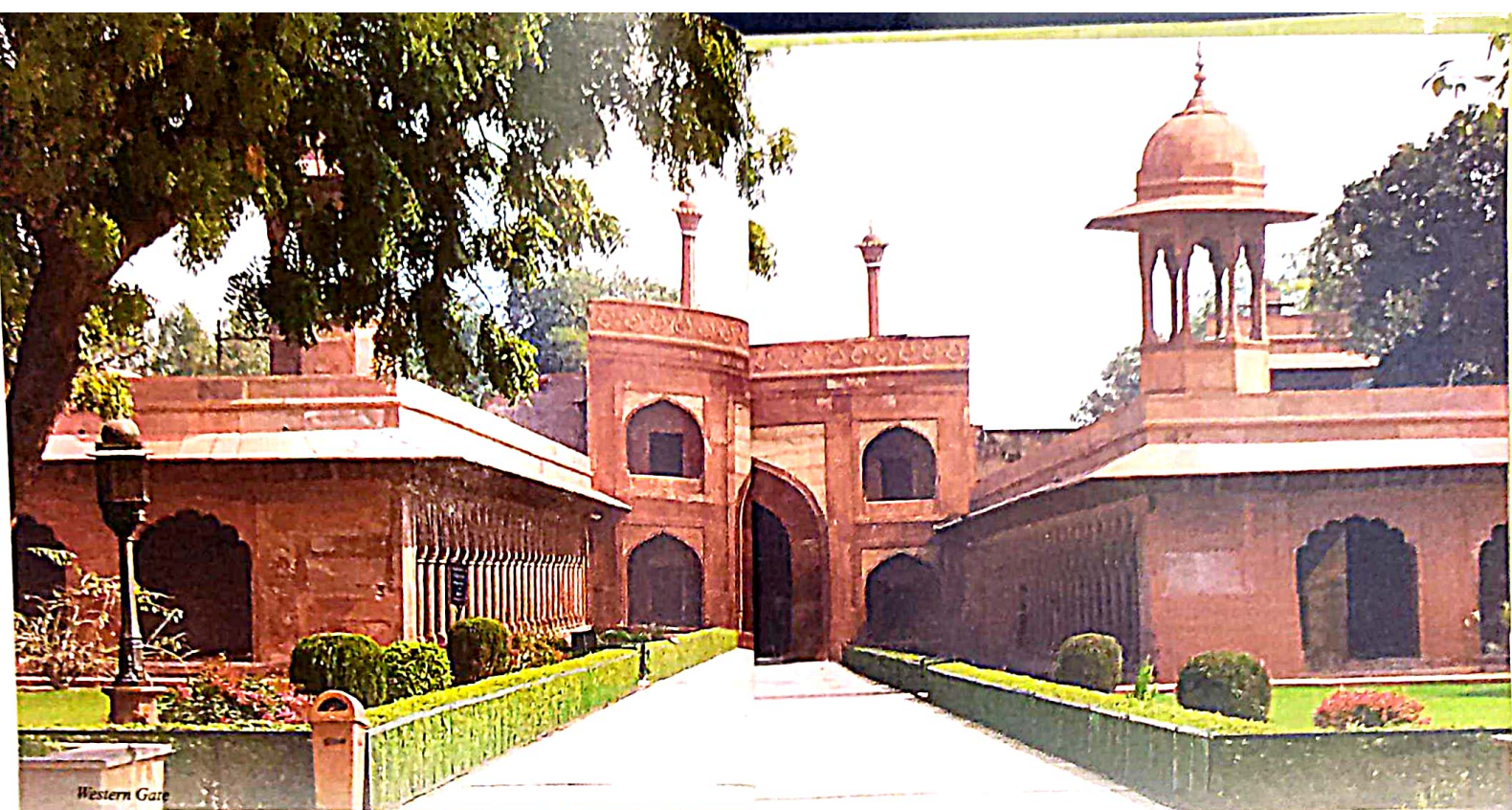
The erection of the above mentioned scaffolding, it would not be difficult to realise, was quite a task by itself, and therefore had not only to be planned carefully but also executed efficiently for two principal reasons: to withstand foreseen loads, and the safety of the workers, animals and valuable materials. In view of the colossal amount of timber employed in production of the scaffolding, the task involved a

sizable number of craftsmen, and according to one authority "special engineers were engaged to build the scaffolding and platform, and 500 carpenters and three hundred blacksmiths were employed on this project alone. It is said that the task was coordinated by Ustad Pira, a carpentry expert hailing from Delhi.

The inner structure of the Taj Mahal, as also other components in the entire complex, is in brick, the masonry being held together by hydraulic lime mortar. After erecting this masonry to the required level, the thickness of the slabs ranging from six to twelve inches and convenient enough for the subsequent inlay ornamentation. That the Mausoleum looks as new and



View of pathway from Eastern Gate



Western Gate

fresh today as on the day it was completed nearly three and a half centuries ago, thus exhibiting no sign of any deterioration in its structure, is testimony indeed of the magnificent strength.

Heavy materials such as red sandstone came from Fatehpur Sikri, some twenty three miles away west, south-west of Agra, while marble had to be brought from Makrana in the old Jodhpur desert kingdom, 109.44 km west, north-west of Jaipur and 321.87 km almost due west of Agra as the crow flies.

How was the great central dome of the Taj Mahal, the shape of which the contemporary

historians define as *Gumbad-i-amrudi* (meaning like that of a pear) erected? Since it is gigantic in size (over 34.32 m in height from base of drum to apex, and over 27.43 m in diameter at the maximum bulge) and in order to ensure its shape accurately, it is quite likely that the engineers drew a sectional outline of the dome on the ground on a reasonably large scale, or even made a cut-out model in mud and clay, for the masons to follow. In regard to the centering of dome, Manrique observes that from the centre of which this famous Geometre (the architect), by drawing equal lines, constructed a perfect circle with less trouble than Archimedes of Syracuse."

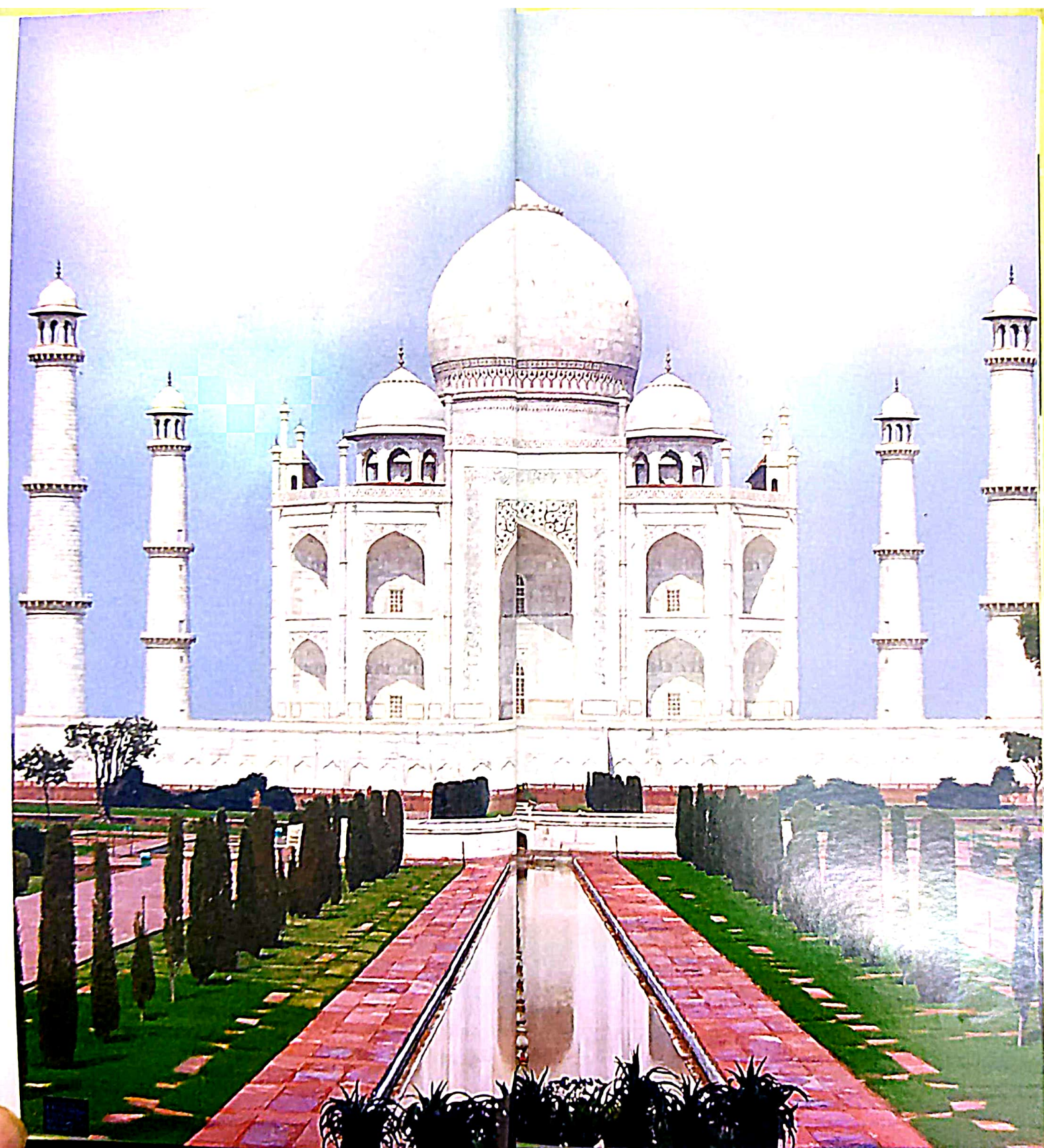
Architects of the Taj Mahal

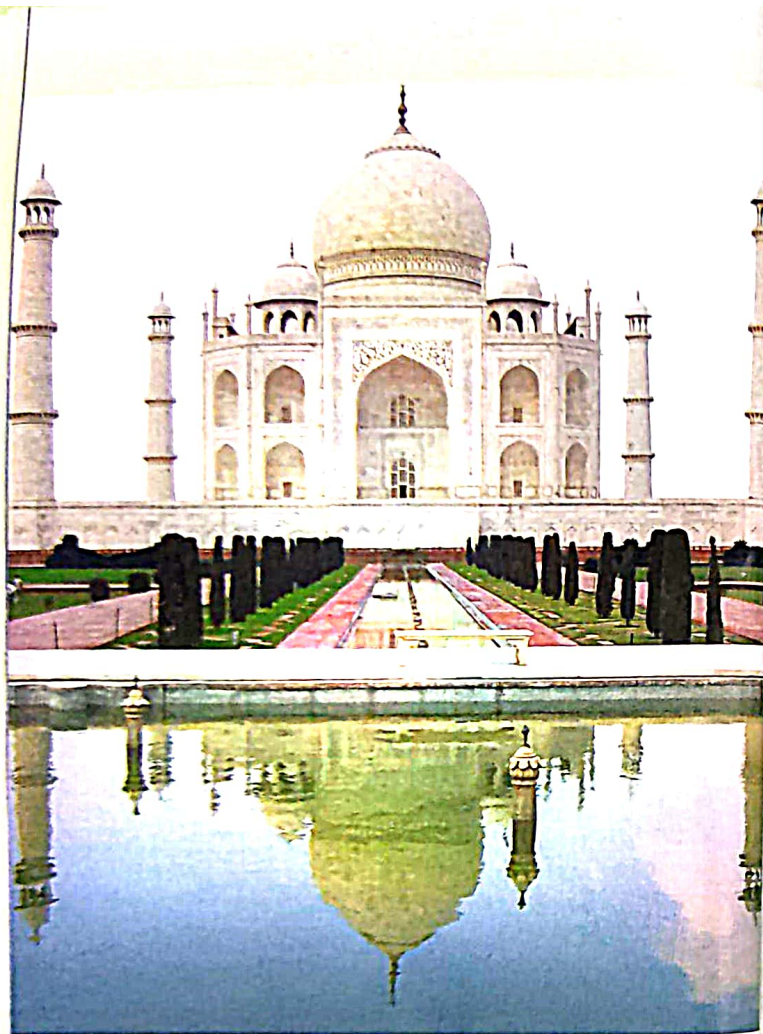
Two architects are, however mentioned in connection with the Taj Mahal. One is Ustad Ahmad Lahauri from Lahore. He laid the foundation of the Red Fort at Delhi (1639-48) and was credited by his son, Lutfullah Muhandis—though not in the official chronicles—with building the Taj Mahal. The other is Mir Abdul Karim, who had been the favourite architect of Jahangir. Lahauri mentions him as supervisor of the construction of the Taj Mahal, together with the administrator Makramat Khan, who later supervised the building of the Red Fort at Delhi. The craftsmen

working on the restoration of the Taj Mahal today use techniques that have not changed much since Mughal times. Ustad Isa Afaudi prepared the layout plan of Taj Mahal.

Jean Baptiste Tavernier, who was in Agra in 1640-1641 and again in 1665, claimed that 'twenty thousand men worked incessantly on the tomb for twenty two years. Manrique says that a thousand men were employed on it every day. Stone cutters and brick layers were called *sangtrash* and *raj* respectively.

The riverside foundation is a miracle of hydraulic engineering of Shah Jahan's time. There are series of 12.19 m deep wells with





View of Main Mausoleum from the Central Tank

274 m diameter full of sal wood bands and masonry of blocks of stone and strong mortar

Another striking aspect is that the Taj is the heaviest structure over a river bank without sinking to an inch. The most remarkable aspect is that river Yamuna which has been shifting for miles in Delhi is yet by the side of Taj Mahal. The builders of Taj Mahal had taken the

highest water level so much so that during the highest floods in Yamuna it was flowing 2.74 m below the first terrace of the Taj while flood water was flowing above the Mausoleum of Itimad-ud-daula. Some 32.19 km further, the continuous earth work on the banks of the Yamuna had the river tamed by the side of the Taj even after three hundred and sixty five years.



The Jilaukhana or Forecourt

The two *Bazaar* streets lead into the great ceremonial forecourt, referred to by the historians of Shah Jahan as Jilaukhana. Here visitors to the tomb would get down from the elephants and horses and assemble in style before entering through the Main Gate. The Jilaukhana was also used for the ceremonial gathering on the first anniversary of the death of Mumtaz Mahal. The *Chawk-i-Jilaukhana* (courtyard in front of the house) or Jilaukhana for short was an element that had been introduced on a ground seal into the Mughal architecture. Under Shah Jahan's court etiquette and proposed ceremonial behaviour had come increasingly important and required adequate architectural training. The lack of a forecourt was bemoaned as one of the serious deficiencies of the Agra Fort. When the Nobles came to court in great numbers, they had no place to dismount, leading to congestion and traffic problems.

There is a Mughal well near the south gate.

Two identical *Bazaar* streets lead from the east and west gates to the Jilaukhana. According to Lahauri and Kambo, the Taj was completed on 6th February 1643. They lead the reader from north to south, beginning with the Mausoleum ending in the Mumtazabad (Tajganj) *Bazaar* Caravan *Sarai* complex. Mumtazabad had markets caravan *sarais* and a few residences of distinguished architects and artisans. Very few buildings of Shah Jahan now remain in Tajganj. What little remains is buried in the Tajganj area. We start from the gates from the area where from present day visitors enter in the opposite direction, from the gate of the Jilaukhana to the river front terrace to approach the Taj, one starts from the physical world to the spiritual climax of the mausoleum. On turning back one sees the *Bazaar* and Caravan *Sarai*, the water works and the adjoining buildings outside the walls.



View of Main Mausoleum with garden

The East Gate and West Gate

The east and west gates are very similar in construction, the outer facades have a broad centre with a *pishtaque* (vaulted archway) in a rectangular frame set between gates, polygonal shafts topped by *guldastas*, ornamental pinnacles extending about roof level which marked the centre off from the flanking angles sections of wall at the top as a

parapit carved in leaf with the characteristics of Mughal pattern of multi cusped *kangooras*. (*folios*)

The Main Gateway

The last edifice to be erected in the Taj Mahal walled enclosure was the imposing main gateway towering over a hundred feet high and appropriately sited in the middle of the southern perimeter. A double-storeyed affair on an almost square

ground plan with octagonal towers at its angles topped with lovely cupolas of similar design as those around the central dome of the Taj Mahal, this fabric possesses a superb elevation, what with its lofty recessed arch above which figure eleven miniature arches, on each of which rests a small dome in marble complete with pinnacle, an arrangement embodied on both the south and the north sides. A very beautiful *Thulth* (*triangular style of calligraphy*) inscription appears on the Main

Gate which contains verse *Wal Fajr*, which ends with the word "now enter the paradise" This emphasises that the interior is the paradise which is the abode of Mumtaz Mahal. These small domes are flanked on either side by pencil slender towers which are loftier than the former. This pleasing pattern enhances the skyline. The ground layout of the main gateway and its elevation were planned in such proportions as to balance with the chief attraction of the complex the Mausoleum of Mumtaz Mahal,

Main Entrance Gate with detail of inlay on Central Arch





Calligraphy on Main Entrance Gate

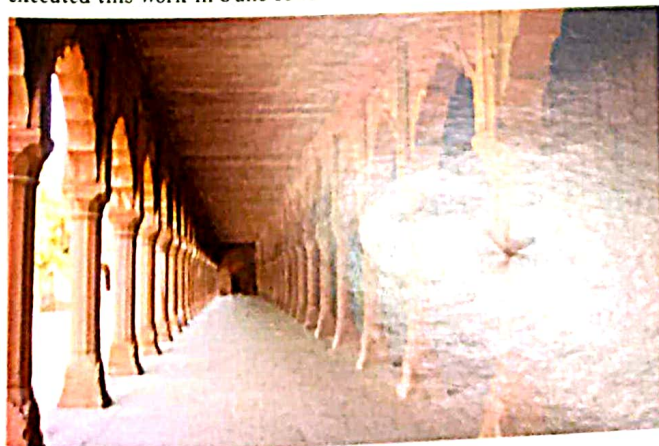


An Evidence of Abdul Haq Amanat Ali Khan Shirazi, Calligrapher

of which an entrancing view is obtainable from this massive portal. On either side of the lofty central arches on the north and south elevations are minor arches one atop the other. The inverted U-shaped frame of the central arch bears one of the most dazzling specimens of calligraphy comprising verses from the Quran, the inscription executed with such elegance and finesse that on the first line level though at the considerable height of 24.38 m above the platform, and on the last line at almost eye-level of the observer, the size of letters appear to be the same size.

This achievement in perspective is the *chef-d'oeuvre* of the master calligrapher, Amanat Ali Khan Shirazi, who executed this work in June 1648

as evident from the date of the inscription. The Mughal version is remarkable for the harmonious proportional relationship of the parts of the building and the elegant architectural ornaments. The interior of the Gate is also remarkable for its ornamentation. There is an inscription which bears the name of calligrapher Amanat Ali Khan Shirazi and the date of completion of the Taj Mahal in A.H.1057 (1647 A.D.) on both sides. The south sides are spacious long arcades with Shah Jahani pillars and *kangooras*, meant for feeding needy and poor persons besides shelter from rains for attendants of the mausoleum. At the end of both sides there are dormitories known as *Khwaspara* meant for attendants who lived in them.



Inner Arcade of the Taj Mahal Complex



View of Main Entrance Gate along with Water Channel and Fountains



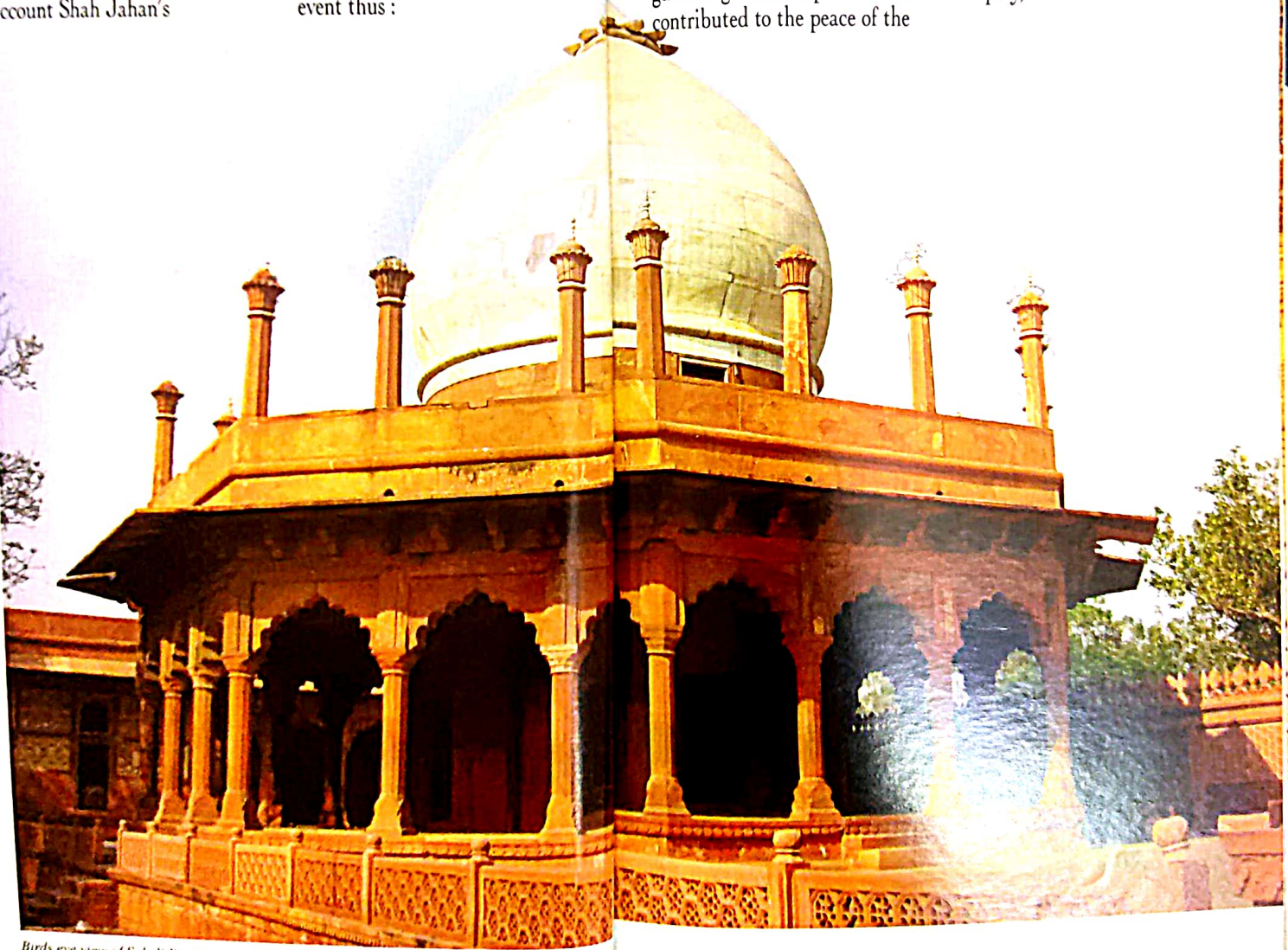
Seventeenth Death Anniversary of Mumtaz Mahal

The completion of the construction of the elegant main gateway of the Taj Mahal enclosure was, it would appear, either planned to mark the seventeenth death anniversary of Mumtaz Mahal or was it pleasing coincidence. Taking into account Shah Jahan's

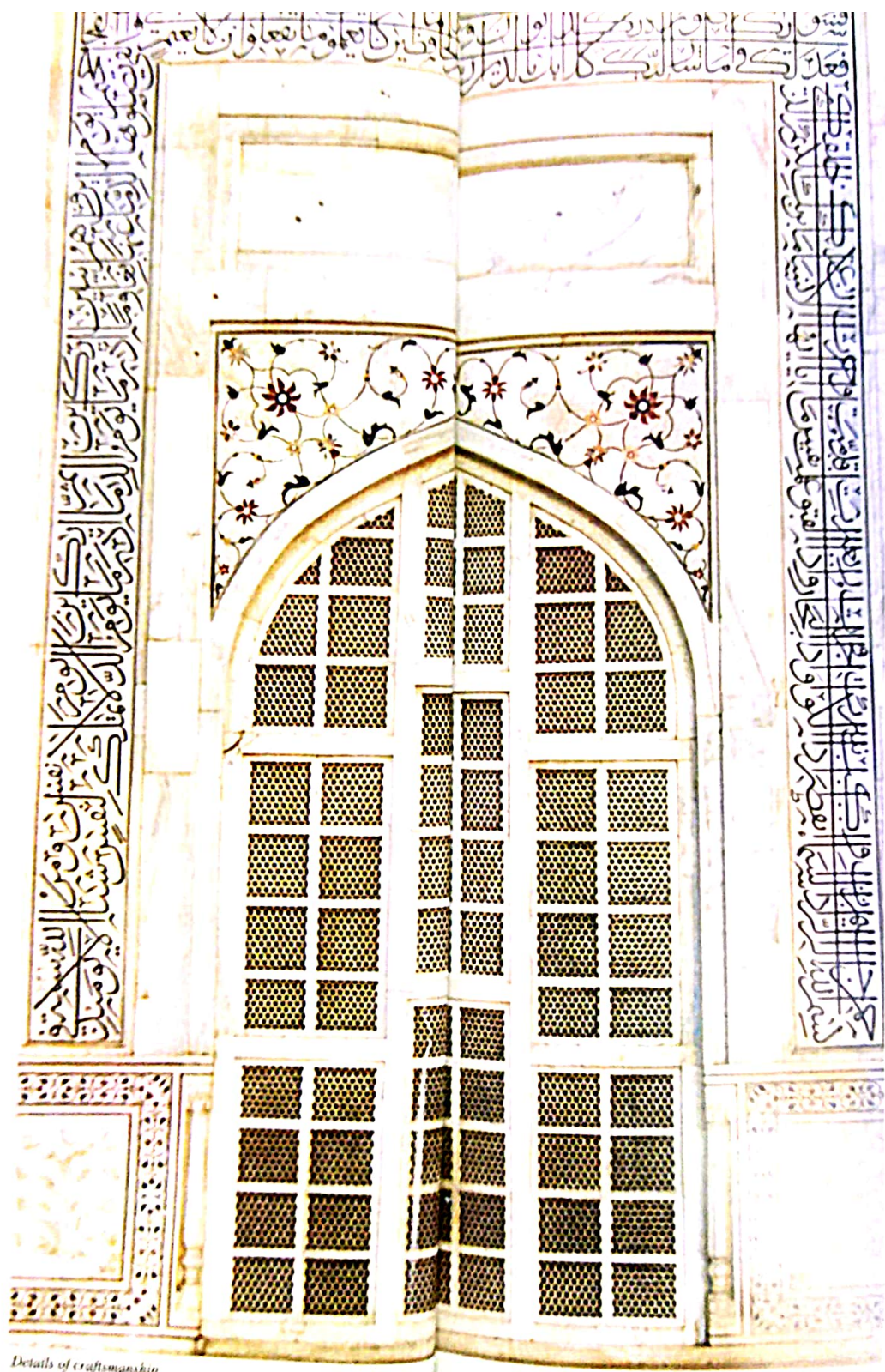
thoroughness it was more probably the former. Be that as it may, the occasion was attended by a solemn ceremony for which the grieving Emperor made it a point to be present at the capital, despite other pressing needs. The chronicler of the day relates the event thus :

"On the occasion of the 17th anniversary of (Hazrat) Mumtaz-uz-Zamani's demise, an auspicious assembly distinguished by the attendance of many learned and pious personalities were convened within the resplendent Mausoleum (which had attained completion by then) of that lady of holy attainments. The Emperor himself graced that gathering with his presence and contributed to the peace of the

soul of that chaste dweller of the garden of paradise with prayer and benedictions." The care taken in preparations and the expense involved on such occasions may be judged from Tavernier's observation, made not long afterwards, to the effect that "they change the tapestries, candles, and other ornaments several times, and there are always Ulemas attending to pray,"



Birds eye view of Saheli Burj from Entrance Gate



Details of craftsmanship

The death anniversary (*urs*) of Mumtaz Mahal, as we have seen, was observed religiously every year, but the seventeenth was the most ostentatious, and considering that the erection of the Taj Mahal had been achieved, it must have given a feeling of lasting satisfaction to Shah Jahan. The sight of the chaste white fabric in alabaster towering almost 76.20 m in height, the perfect lofty arches which were like exquisite picture frames resting cosily on

the milky platform, at whose nooks stood the solemn sentinel-like slender conical minarets as if fervently guarding the sacred tomb of the angel in their midst and the enormous dome rising like a snowy cloud atop the Mausoleum, elated the Emperor. It was as if Mumtaz Mahal had been brought back to life! As on earlier anniversaries, he donated half a lakh of rupees to be distributed as alms among the poor and needy.



The Garden and Water Works

Shah Jahan, as a true artist studied beauty from every aspect, including that of gardens, leaving no details. When grief struck him to the very core of his heart in the untimely demise of Mumtaz Mahal, Shah Jahan deemed the memorial to be created for her to be a very special matter. The garden

decorating the tomb had to be special too. Ran Mal from Kashmir was the chief designer of Charbagh garden. In the Charbagh, while the garden assists the central building, be it tomb or *baradari*, so do the latter dignify the garden. And when the time came for the Taj garden to be laid out, Shah Jahan



The Gardens



The Water Channels



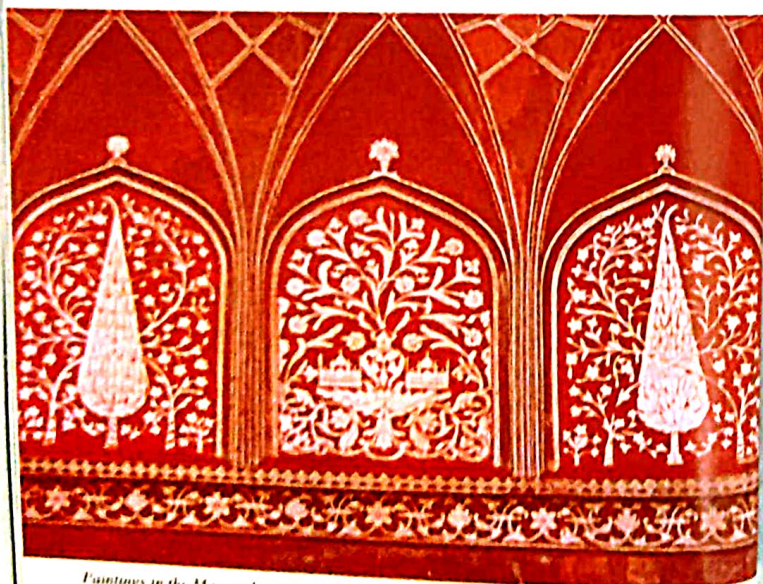
decided just as the Mausoleum was to be unique, so must also be the garden adorning it. And his novel idea of siting the Mausoleum on the bank of the Yamuna and sprawling the whole garden south of it has been interpreted in several ways— but to the mind of this writer, it was Shah Jahan's way of laying fragrant flowers at the feet of the queen whom he loved so much.

The raised square tank took the traditional place of the building, having five fountains, and was remarkable. As the fountain played, they gushed forth tears mourning the loss of the departed Queen. Ahead and behind them are the north-south channels of water also adorned with smaller fountains, playing in lines. The avenue of cypresses, lined the paths on either side of

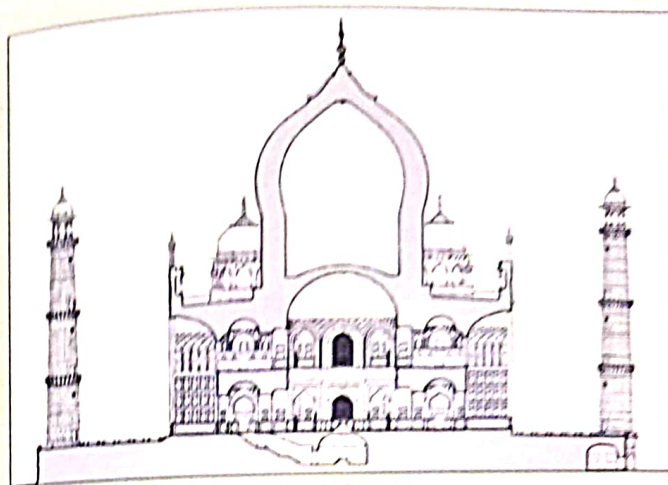
the channel which came to the main gate. The rest of the garden appears to be the traditional pattern, the simple fourfold field of Babur.

Most of the other characteristics of the Taj Garden are incidental, as Mrs. Villiers Stuart tried to indicate: What inspired Shah Jahan to change the traditional order of the design? Was it the natural beauty of the site on the river cliff? Did he build this tribute to his adored wife there, because from his balconies in the palace fort he could watch the sunrise and the sunset transfix its marble into rosy life?

The great Emperor meant to complete his masterpiece with another for himself across the river, joining the Taj to Taj by a



Paintings in the Mosque having two identical Taj Mahals



Sectional elevation of Taj Mahal showing the Basement

bridge of black marble with the Holy Yamuna itself the centre of the scheme as is believed.

There is no doubt that the Taj Mahal and its garden comprise only half of Shah Jahan's project as is evident from two pictures of the Mosque of Taj. But archaeologically it is not correct since there is no such hydraulic foundation like Taj Mahal in the Mehtab Bagh on the riverside.

It may be interesting to add that before the arrangement of the water supply from Agra waterworks to the Taj Garden was affected, an antique method was in vogue, located at the northern and the western perimeter wall: "Two Persian Wheel Lifts run by bullocks—raised water from an artificial channel connected with the river, to high-level tanks behind the Western Baradari, whence pipes conveyed it in to the garden." It is presently run through

electricity and the gardens of Taj are irrigated by its water.

The Great Basement

At the northern end of the garden is what is known as the Great Basement, a vast rectangle sprawling 299.80 m east-west in length and 111.80 m north-south in width, made entirely of small bricks (lakhauri bricks) and thick mortar veneered by marble slabs of fine quality, its four corners adorned with three-storeyed circular towers topped by cupolas. This Great Basement is divided into three parts: the Mosque on the west, the Mausoleum of Taj Mahal in the centre, and the building on the east which is identical in design and structure to the Mosque and which is called the *Jamaat-Khana* (Guest chamber or *Mehman Khana*) and symmetrically, the *Jawab* (Answer) or replica.

Underground Chambers

Close to the northern perimeter of the Great Basement, that is along the bank of the river Yamuna, and situated about a hundred yards measured from the eastern and the western corners are two rectangular openings (approximately 3.23 m east-west in length by 1.22 m north-south in width). Each opening is surrounded on all the four sides by a two-foot high red sandstone lattice railing without any interval for convenience of entry. In each opening descends a flight of 25 steps leading to a series of curious subterranean chambers built of Lakhauri bricks and thick sandy materials, whose total length is about 109.75 m. A tunnel-like corridor runs immediately south of these chambers along their whole length. The combined north-south width of the chambers and the corridor is 7.98 m which coincides with the width of the pavement between the base of the lofty marble platform on its northern side and the northern perimeter of the Great Basement overlooking the river.

The description of the Taj Mahal as furnished by the contemporary documents, *Badshahnama* and *Amal-e-Salih*, written by Shah Jahan's court historians do not allude to these subterranean chambers. These chroniclers were concerned more with focusing attention on the Crowning Glory, the Taj

Mahal. In particular the sheet of pearls which Shah Jahan had made for the tomb of Mumtaz Mahal valued at several lakhs of rupees, which was spread on the anniversary and on Friday nights (and) the ewer of Nur Jahan and her cushion of woven gold and rich pearls, with a border of valuable garnets and emeralds which were taken away by Husain Ali in 1713-19 A.D.

The features of these underground chambers is that they have domical ceilings which are ornamental from the apex down to the domical base with the elegant geometrical patterns reminiscent of stars. The dados are decorated with green and red borders upto a height of about 1.19 m from floor level, and the fact that the colours are still clearly visible speaks highly of the knowledge of the chemistry of paints of chemical engineers three and a half centuries ago. Above the dados and thence up to the base of the domical ceiling, the walls of the chambers are ornamented with arched-

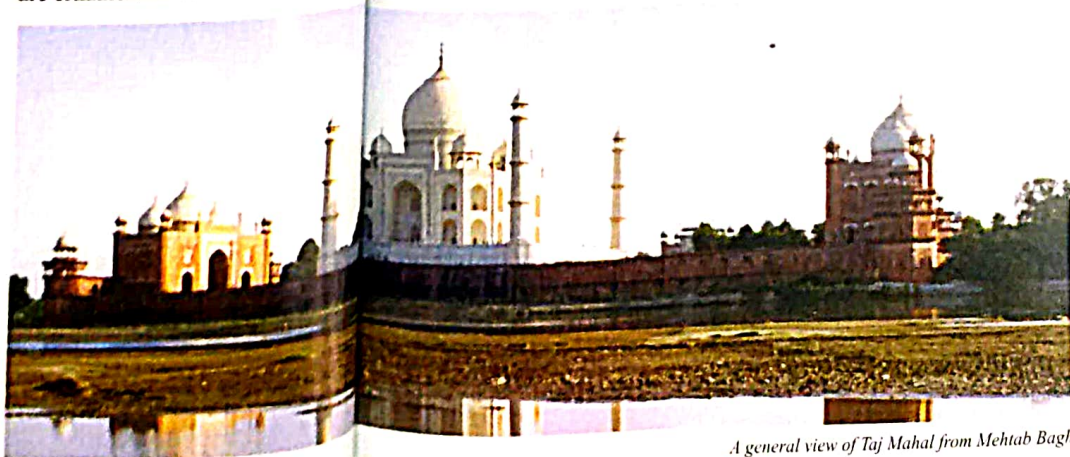
shaped panels sunk in them. At the angles of these mysterious rooms, the panel borders in green and red paint are divided from the next on either side by a centrally-sited raised panel in plaster.

Another interesting feature of these subterranean chambers is the series of false arches sunk in the walls of the northern perimeter, along the riverside, the filing of the arches being in brick.

Immediately south of the line of the underground chambers is a corridor which runs along the entire length of the chambers and also extends beyond their western and eastern ends, where the corridor skirts round the perimeter of the foundation of the minaret pod, the extent being the three northern sides of the octagon. These corridors, like the series of chambers, is also, arcuate in construction in brick, the surface of its walls and ceiling (which has arched elevation throughout) covered

with plaster. The width of the corridor varies between 1.52 m and 2.44 m. The surface of the plastered walls of the chambers are smooth white and shiny and gives the impression that in Shah Jahan's time, the surface must have resembled marble.

From the elevation section of the corridor, the southern wall has been so sited that it bears the load of only the Great Basement above and not that of the minaret whose centre of gravity falls well to the south of the wall. This is also evident from the fact that in comparison to the width of that portion of the Great Basement lying between the northern perimeter of the marble platform and the riverside wall is 7.96 m, while the combined north-south breadth of the subterranean chambers and the corridor is 7.98 m. The Mughal engineers of Shah Jahan had taken care to site and construct these chambers and their corridor such that they did not interfere with the foundation under the marble platform.



A general view of Taj Mahal from Mehtab Bagh



Mosque and Jamatkhana or Mehman Khana

The western section of the Great Basement measure 111.65 m north-south by 102.20 m east-west. Proceeding westwards from the base of the Taj Mahal marble platform there is 7.19 m wide chequered pavement "with insets of four marble rhombs radiating at right angles from common centres and interwoven with four stars of red sandstones, a red sandstone courtyard measuring 95.40 m north-south by 47.85 m

east-west, in the centre of which is a tank, 5.64 m east-west by 4.00 m north-south, ornated with five fountains, a red sandstone pavement 7.19 m broad, the platform in front of the Mosque, 56.68 m north-south by 16.70 m east-west, and finally the red sandstone Mosque itself, centrally sited along the western perimeter of this section, 56.68 m north-south by 23.38 m east-west.

This Mosque is a very elegant edifice whose walls are ornamented with marble inlaid in red sandstone in attractive geometric and floral designs. The octagonal turrets at its angles are crowned with kiosks having marble *chhatris* (kiosks). Atop the Mosque are three marble domes, bulbous in shape the central being the larger in size, while the other two of its either side are smaller but identical. In the south of the Mosque and adjoining the last arch is a staircase, which leads to the terrace on the second floor,

whence a lovely view of the Taj Mahal presents itself.

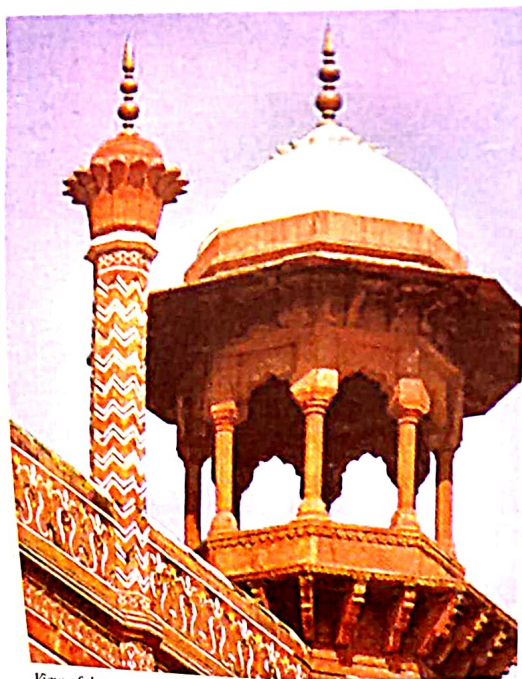
The frontal elevation on the west, that is, facing the courtyard and the Taj Mahal, is beautiful, its middle dominated by a lofty speed arch, 15.24 m high at the apex and 11.34 m broad at the base. Flanking it are two small arches on its either side, 9.94 m in height and 5.76 m wide, above which are two smaller cloned arches faced with white marble. Beyond the small arches the wall is decorated with attractive oblong designs

Close-up view of Mosque, Taj Mahal Complex



inlaid with marble from the ground floor to ceiling level of the second storey. The central and the flanking arches, as also the latter and the oblong patters, are separated by the pencil type columns crowned by miniature but solid *chhatris* topped with gilded pinnacles. These columns are inlaid throughout their height with zig-zag designs or inlaid marbles.

The octagonal towers at the front angles are engraved all along their length with rectangular shapes, their outlines inlaid with marble. It is now housed by the Taj Museum. The domed octagonal kiosks atop these towers are supported on eight pillars with like number of openings. The top of these



View of the octagonal tower of the Mosque

cupolas reach a height of 26.70 m and are crowned with 2.13 m high finials, the overall height being 28.83 m above platform level. The terrace on the top floor has a low lattice red sandstone railing on its perimeter.

The central dome has a diameter of 11.01 m, while that of the smaller domes 9.57 m. The top of the former rises to a height of 43.28 m, atop which is a 4.57 m tall pinnacle comprising three globes one above the others while the top of the smaller domes are 35.54 m in height, topped by a similar design finial 3.96 m high. All the pinnacles are made entirely of brass, and of the three globes the central is larger than the one above and below it.

The Mosque

The general ground plan of the Mosque consists of a main entrance through the central arch, wherein there is a portico 15.91 m long, 11.01 m broad, and 8.00 m high. On the north and south of this portico and connected to the small arches, are two chambers rectangular in shape, with small galleries to their west linking the three larger chambers. The central one comprising the large hall in whose middle western side is located the pulpit, measuring 1.09 m by 1.01 m by 1.61 m adjacent to which is a beautifully ornamented arched recess.

There are several inscriptions in the Mosque, namely in the arched recess stated above, a circular inscription outside the same, another on either side of the smaller arches, and a similar one on the first door of the Mosque on the northern side, the same text repeated on the first and the third arches of this door. The details of the inscriptions at the various locations are:

(a) Arched floors adjacent to the pulpit : the inscription comprises the text of "*Wsh Shams*", that is, the sun, or rather its light and brightness regarding which the Surah XCI of the Holy Quran sings eloquence.

(b) Middle portion of Mosque, on the back wall. Engraved is "Al-Tauhid", "The Unity" – Unity of God, as indicated in Surah CXII, thus :

" *In the Name of Allah, the Beneficent, the Merciful, say:*
 • *He is Allah, the One*
 • *Allah, the Eternally Besought of All*
 • *He begotteth nor was begotten*
 • *And there is none comparable to Him*"

In another sense, the inscriptions, in the context of the Taj Mahal symbolises the union of the royal dead in the land beyond, that is heaven and their union with Allah and God. In such environs of bliss, they would have eternal peace.

(c) The circles around the inscriptions stated in (b) above : this inscription is circular in form and consists of the words "Ya-Kafi Ya-Kafi Allah,"

(d) Either side of the small arches : in several rings or circles, there is the inscription comprising the first formula of the Islamic faith : "La Ilaha Illallah Muhammad-ur-Rasul Ullallah."

(e) Inside Mosque on the first door towards the north : two circular rings contain the first formula of the Islamic faith, which is also repeated in similar pattern on the first and the third arches of this entrance.

In addition on either side of these arches, the same inscriptions are engraved in very elegant *tughra* rings, and in four small circles.

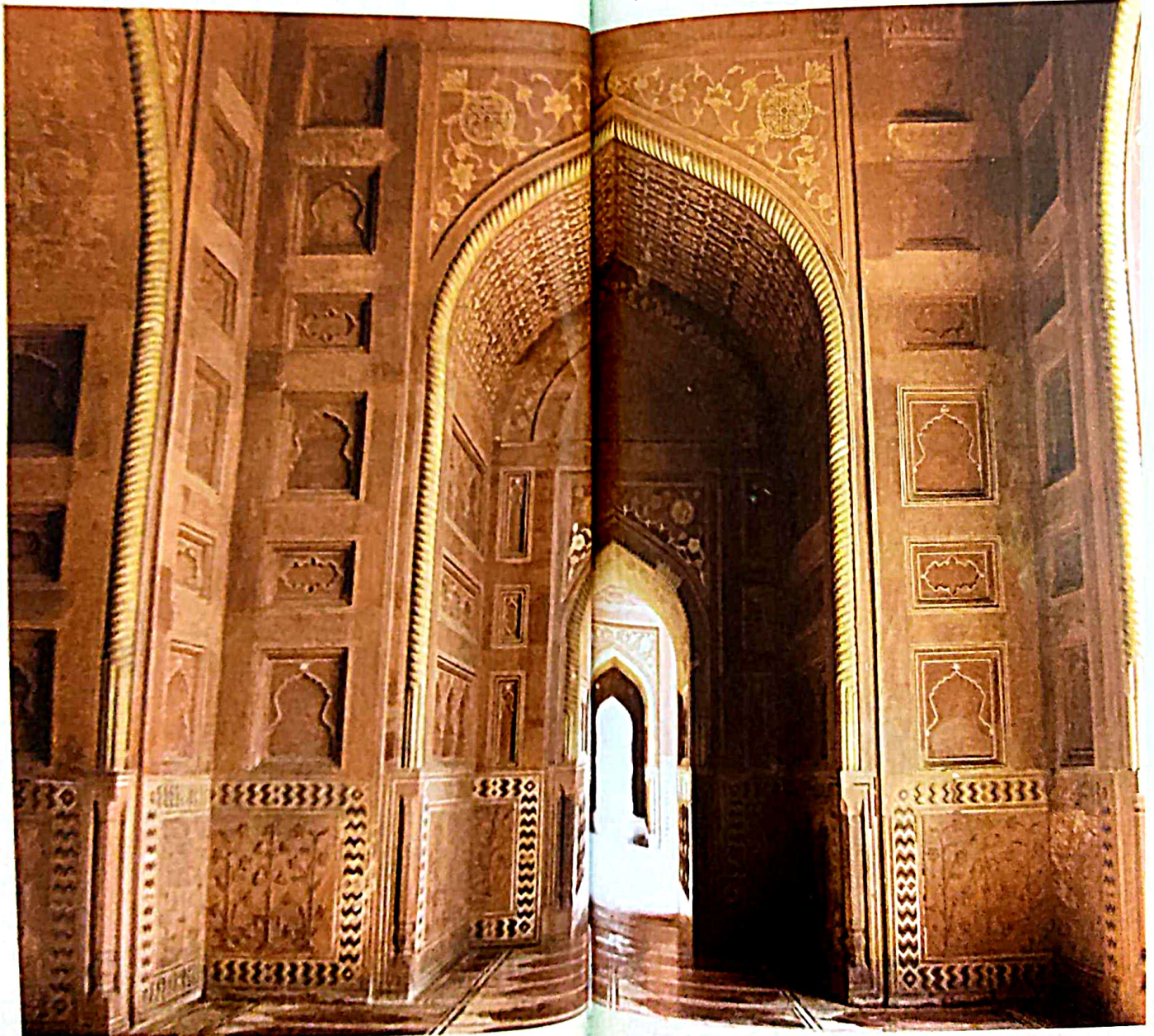
The ornamentation of the Mosque as a whole is of high

taste : "The border of the *imarah-dado* (low wall) facing the Mosque both externally and internally is of marble with a pattern of yellow and black stone—(*mauij parchinkari*)— an undulating *pietra dura*. The floor of the mosque is of red stone to

demarcate separate enclosures like praying carpets (*Jae namaz*). The decorations in the ceiling, squinches, recesses, arches, spandrels, jambs, and in feet everywhere, are superb their beauty and elegance enhanced by the elegant shine on the

surface of the engravings, which resemble the brilliance of red silken velvet.

The Prayer Hall in this exquisite Mosque is large enough to accommodate a congregation of 539 persons, the



Inner view of the Mosque

seats being demarcated by moons of arch-shape outline composed of fragmentation of black stone. One of the interesting curiosities in the Prayer Hall is a very highly polished marble slab fixed in the arched *mihrab* (niche). It is finished like a mirror and so situated what it presents a beautiful reflection of the Taj Mahal. There are two pictures of the Taj Mahal on the facade painted in white.

The Jamaat Khana or Mehman Khana

The *Jamaat Khana* or *Mehman Khana*, or the *Jawab*, which is identical in style to the Mosque and located to the east of the Taj Mahal and at the eastern end of the Great Basement, has the same dimensions as the Mosque. It was built to maintain the sense of balance and symmetry which actuated the whole design of the

Taj Mahal project. The edifice was used for the congregation of royal personages on the occasion of the death anniversary (*urs*) of Mumtaz Mahal and also at a later date, that of Shah Jahan. It differs in minor details in so far as there is no *mihrab* (niches) or prayer carpet patterns in the Prayer Hall. The ornamental patterns of white on a red background in the ceilings and floral designs on the walls are lightly different from those in the mosque, but there are no *tughra* (decorative style of calligraphy) engravings, decorative circles, or inscriptions. In other words, the wall bears a plain appearance. One of the points of attraction at the *Jawab* is that the full scale representation of the pinnacle of the Taj Mahal is engraved in black stone in the northern side surface of the platform and west of the *Jawab*, its total length being 9.33 m, although from the



Painted decoration inside the main entrance arch of Mosque



ground level it appears to be in small dimensions. But it is interesting to mention that the crown base is 2.69 m above which is a water-pot shape of 1.35 m in diameter followed by another 1.69 m in diameter and 2.69 m high and again a smaller 1.13 m in diameter and 1.01 m tall, a narrower flask 0.37 m in diameter and 0.86 m high, above which is the crescent having a maximum dimension of 1.25 m wide and 1.07 m in height, and finally, the portion rising from the centre of the base of the crescent is 1.01 m high and having a maximum bulge of 0.43 m.

Corner towers

The angles of the Great Basement are ornamented by very attractive three-storeyed circular towers. On the third storey of each stands an elegant kiosk supported on eight pillars and crowned with a marble dome, having a dripstone around its base. The height of this tower is 14.02 m above garden level while the diameter at the base is 27.43 m approximately. The edifice is built on a two feet high platform on the perimeter of which runs a low lattice rail incorporating delicate

perforation pattern. An entrance is provided in each case by an opening facing the Mausoleum. Similar railings exist on the first and the second floor. The core of the towers are built in Lakhauri bricks with thick mortar and over them the tower is covered with marble slabs and topped by a beautiful cupola in marble forming pleasing designs of oblongs and squares. In the outer walls are shallow arched recesses with engravings. Access is gained through an arched door whose jambs and spandrells are inlaid with marble ornamental designs, also exist on the remaining sides with rectangular doors to allow for light and ventilation to the interior.

The two towers on the northern side, which is along the river bank, have staircases descending from the tower to the river. The tower in the south-west corner of the Great Basement has a deep well whose opening is circular in shape in which there is a flight of steps descending to the water-level. The purpose of this was to provide the faithful water for washing themselves before they proceeded to the Mosque for prayers. Adjacent to the towers on the western perimeter of this basement are small sandstone halls, probably for the use of congregation and also to serve as convenient and comfortable spots for respite and shade from the hot rays of the sun during the trying summer months, for which Agra is known.

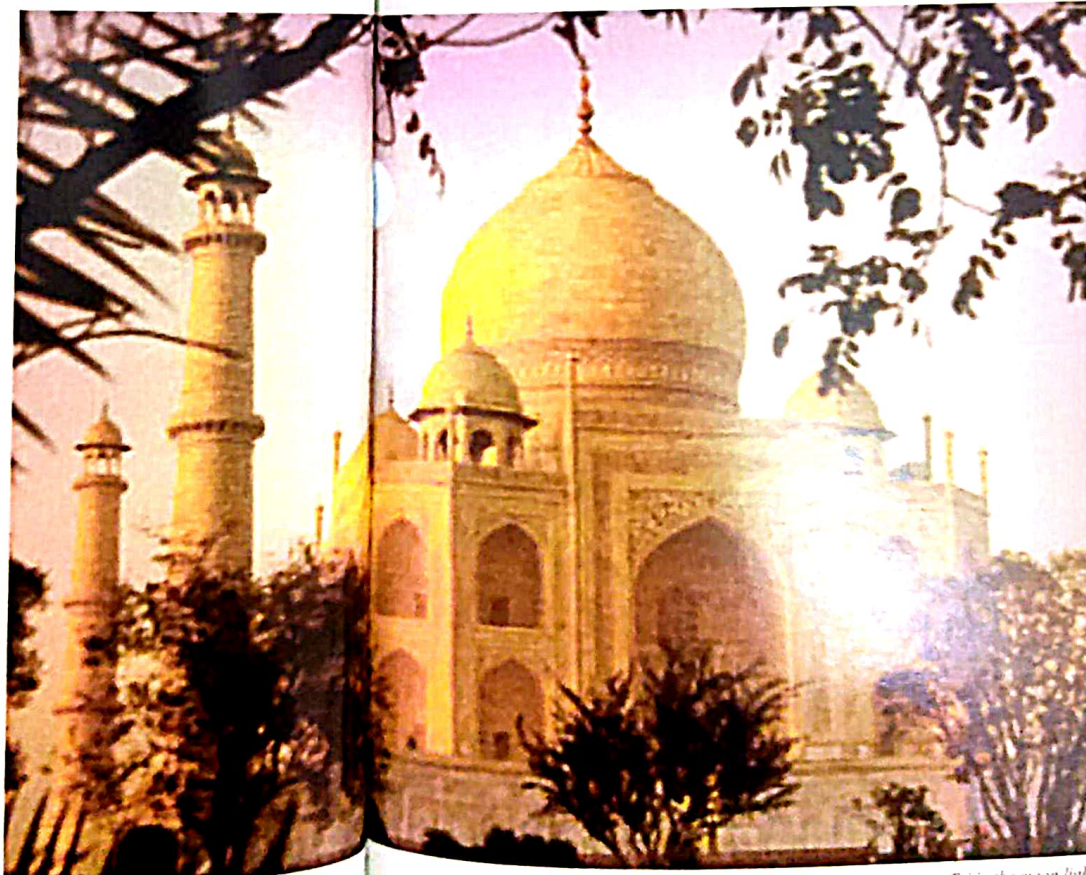
The first floor of each octagonal tower has a tastefully decorated hall, supported in pillars with capitals and exquisite cusped arches, around which is a gallery of small width. On the second floor, the gallery is of larger dimensions than that on the floor below. These circular towers at the angles of the Great Basement not only serve as decorated pieces but also have the appearance of observation posts for all round vigilance.

Basai Tower

The circular turret north of the Mosque is known as the Basai Tower. Regarding the origin of its nomenclature tradition relates that "a collection of houses going by the name of Basai formerly stood in the ground now occupied by the tower. Shah Jahan asked the owners to let him have them on payment of the price. They, however, offered them to him gratis on condition that one of the several structures of the Taj, should be called after their little settlement. The King gladly accepted the offer. The request was complied with and the tower stands to this day bearing the name of its site."



The white marble dome is set against the plains across the river. This background creates a magic of colours that, through their reflection change the views of the Taj. The colours change at different hours of the day and different seasons. Like a jewel, the Taj sparkles in moonlight when the semi precious stones inlaid into the white marble catch the glow of the moon. The Taj is pinkish in the morning, milky white in the evening and golden when the moon shines. These changes, they say, depict the different moods of a woman. The Taj has a life of its own that leaps out of marble, a monument of love - an architectural masterpiece.



Taj in the moon light



Main Mausoleum The Crowning Glory

Having gone round the expansive red sandstone Great Basement which sprawls a total area in excess of eight acres, one sees the marble platform, a marvelous block of accurate masonry 95.40 m square and 5.61 m high, on which gracefully reposes the Taj Mahal - the Crowning Glory itself - which for over three hundred and sixty-five years has been applauded the world over as the

most enthralling edifice that man ever erected to the memory of woman. In its heyday this wonderful fabric was surrounded by a gorgeous campaign of gardens in which the mansions of the nobility stood, all of which ornamented the environs like a bejewelled necklace. Alas, now only may be seen the ruins and remnants lying in dots and dashes amid the unseemly creations of modern architects.

Across the river Yamuna towards the north, the situation is even worse because in place of the former greenery and gardens including the Mehtab Bagh (Moon Garden), one now observes only plowed fields covered by uneven furrows and a sandy tract as far as the eye can see.

As a consolation to the above, credit goes to the Archaeological Survey of India and its army of untiring workers in maintaining in excellent condition the beautiful monuments

immediately outside the perimeter of the Taj Mahal walled enclosure and in adjacent areas, which add a glow to the Crowning Glory.

The corners of the huge marble platform, towering 6.83 m above the garden, comprise five faces of a regular octagon, 3.04 m a side, and project out 1.74 m measured at right angles to the side of the platform. Standing atop the corners as if at attention are the sentinel-like conical minarets, about which more later. The above mentioned octagon serves

not only as a solid pedestal on which each minaret has been erected, which is its primary function, but also as a decorative piece which enhances the beauty of the platform. The exterior faces of the platform itself are divided into thirty-nine parts along its length, and into the portions along the height. In the latter case, the upper portion measures 2.43 m above the top of the lower, which is 3.17 m in height measured from the floor of the Great Basement. While this lower portion of the facade of the platform side consists of a

lovely arcade of 39 oblong frames, each being 2.44 m broad in the horizontal and incorporating within a close or false arch of the typical Indo-Muslim style of the period, the upper is divided into an equal number of decorative and recessed rectangles. These four towers frame the structure of the Mausoleum.

As visible on the southern facade of the platform and leaving those directly under each minaret, namely three each at either end, the remaining 33 arches are divided into three sections of 13, 7 and 13 respectively. The central seven form part of a projection in white marble very nearly 18.29 m in length and 3.32 m deep, containing a flight of 21 steps at each end, connecting at the base of the platform ascending inward towards the centre at the top, where there is a small landing. Each of the 39 arches has a base width of 1.71 m, the jamb on either side being 0.39 m. The spandrels contain a lotus decoration in each corner, and in the middle of each spandrel is the pointed apex of the arch, the overall view being very beautiful. On the west, north and east sides of the platform and incorporated immediately behind the facade are long rectangular halls 21.03 m in length and 5.97 m in breadth, each divided into three parts in such a way that the central is larger while the remaining two on either side of it

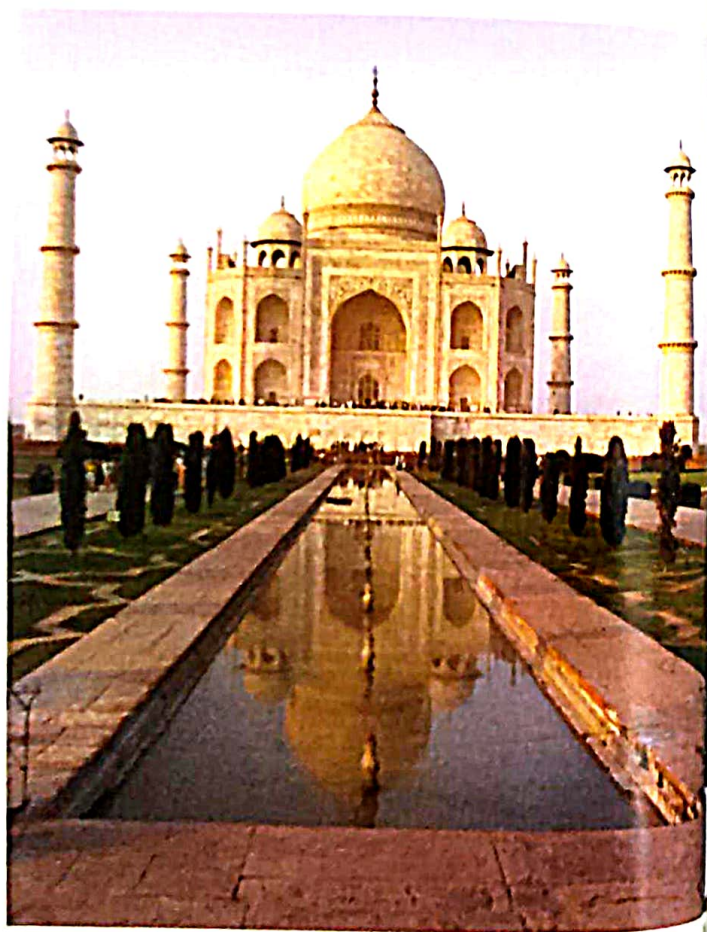


Eastern Naubat Khana

are smaller but of the same size. The passages from the Great Basement leading to the underground chambers is also connected to the halls, to which light and ventilation are admitted through a perforated window. Though these long rectangular halls are at same distance from and around the Mortuary Vault on the same level, they were probably linked to the latter at one time. What other purpose could they have served except as cool retreats during the hot summer months? And, those overlooking the Great Basement are conjectured to have

provided the members of the harem a convenient place to view the goings-on in that basement as and when any religious or other functions were held during the Mughal period, particularly in Shah Jahan's time.

The Crowning Glory which is an architectural gem fashioned by Indo-Muslim genius, the ground plan of the Mausoleum is an irregular octagon evolved from a square 56.69 m a side with its corners cut off; this results in a figure with long sides, each measuring 42.26 m, and four short sides a fraction



over 10.24 m in length. It is sited in the centre of the square platform already described, thus leaving a spacious terrace 19.39 m all round the Mausoleum. The floor of this terrace is decorated with diamond and star shaped patterns in white and black marble, the surface colour of the latter having faded somewhat with age. The immediate border around the Mausoleum embodies ornamentation comprising coloured marble lotuses and composite designs on a white background.

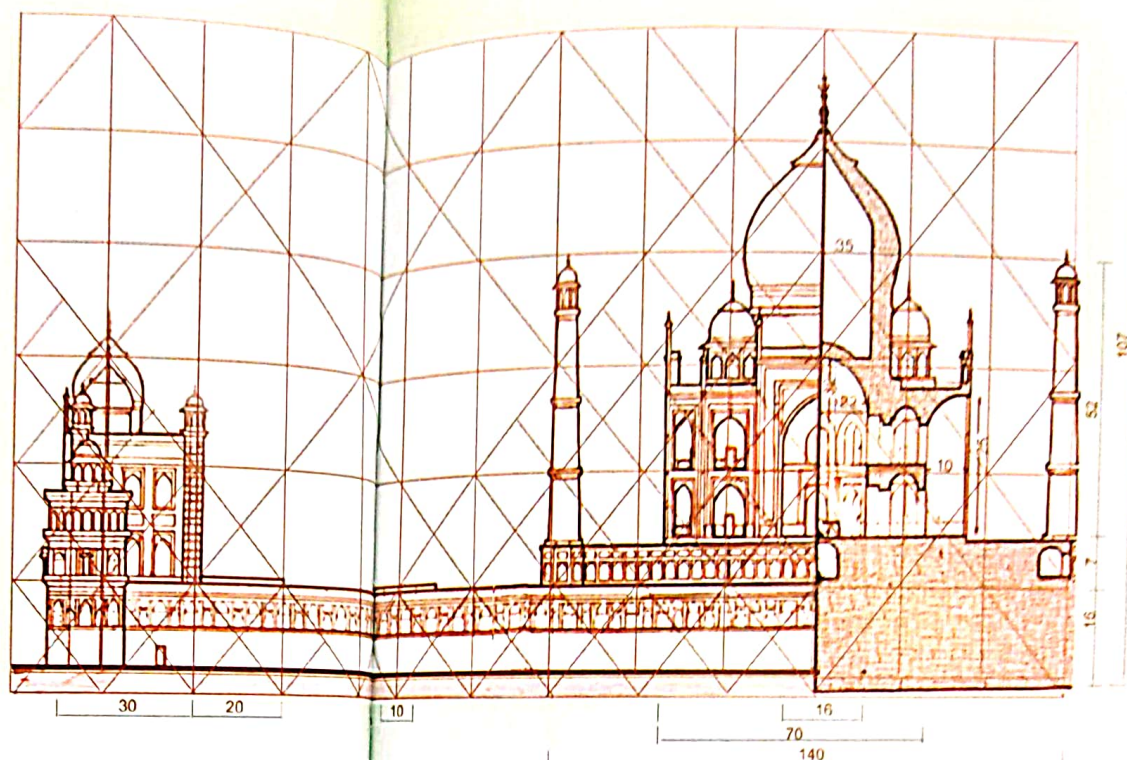
The longer sides of the Mausoleum are pierced at the middle by lofty apsed doorways, 12.89 m wide and 8.05 m deep, on either side of which are smaller apsed doorways, 5.48 m wide and 3.35 m deep, while the shorter sides are similarly adorned with apsed doorways, semi-octagonal in shape, 5.49 m broad and 3.35 m deep. In the four corners of the Mausoleum are octagonal chambers, 8.05 m in diameter with oblong recesses 2.44 m by 1.22 m at the cardinal and the ordinal points, each chamber thus having an appearance reminiscent of a fully blossomed lotus. Six of these recesses are connected to the smaller apsed doorways, adjacent ante chambers 9.75 m by 3.96 m and the main central hall with galleries 3.05 m by 1.52 m, 5.48 m by 1.52 m and 5.48 m by 1.52 m respectively.

The adjacent ante chambers, stated above lie immediately behind the lofty apsed doorways,

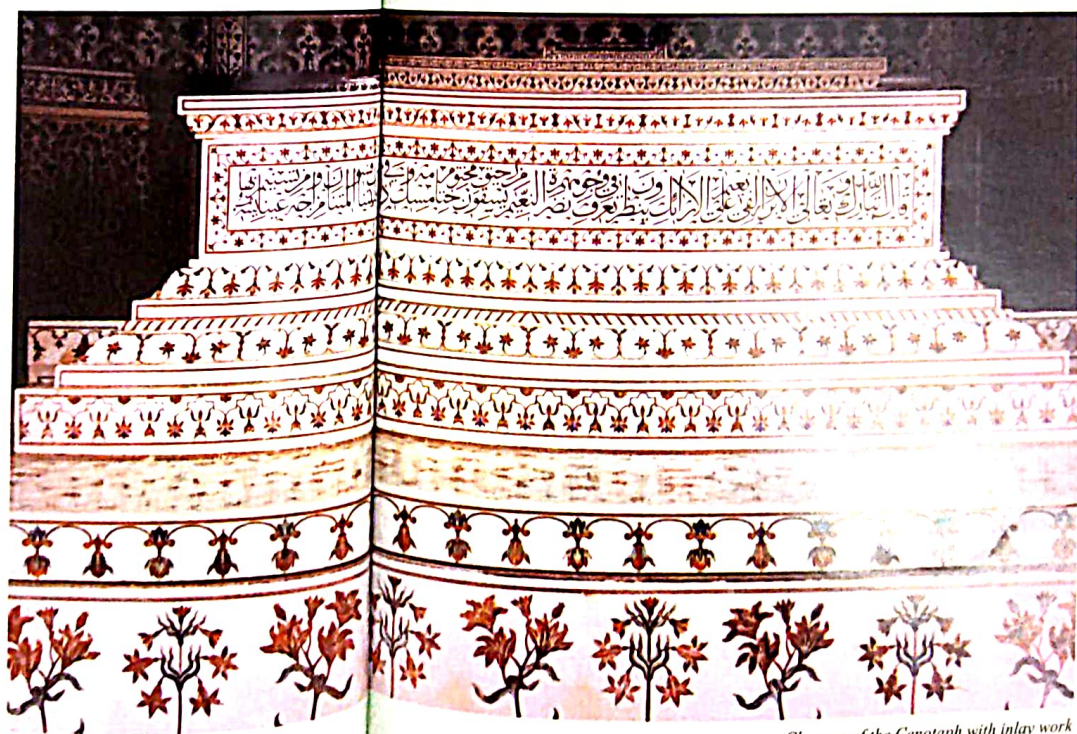
to which they are linked with lattice screened doors. The galleries on the southern side are connected to the upper storey with staircases, which emanate from the middle of the north-south galleries. These staircases in shape comprise half of a regular octagon, 6.40 m a side. An opening, 2.01 m by 2.01 m, in the centre of the ante chamber floor on the southern side leads down a staircase directly to the underground vault, where lie the actual graves of the Emperor and Empress. The centre point of the corner octagonal chambers form a perfect square, 31.39 m a side.

The main central hall is a regular octagon, 17.74 m in diameter, whose each side measures 7.34 m. As in the case of the corner octagonal chambers, there are recesses and ante chambers 5.12 m, at the ordinal and cardinal points respectively. In the middle of this central hall is an octagonal perforated marble screen whose east-west diameter is 8.56 m, north-south diameter 6.13 m, and each side 3.71 m, regarding which a contemporary description relates: "Over the grave is raised a parapet of marble with a Sarcophagus in the centre, enclosed by an octagonal stone railing latticed and gorgeously decorated, with a door of jasper stone very much like the Turkish Chain or belt (*band-e-Rusi*) with its various parts linked with iron-hooks inlaid with gold and prepared at a cost of ten thousand rupees."

Concerning this screen, known as the *mahajjar* Dr.H.A Chagtai observes that "the history of this screen round the Sarcophagus is fully known. During the sixth year of the reign of Shah Jahan (1634-35) when the usual anniversary of the death of Mumtaz was to be celebrated at Akbarabad (Agra), the plinth (*kursi*) was quite ready. Bebadal Khan the superintendent (*darougha*) of the gold store had prepared in the meanwhile for the grave a fence or screen of gold with enamel work of 40,000 tolas in weight (according to Tavernier, VI, 333 and II, p.333-37, one rati equals 2.66 grain troy, therefore 40,000 tolas of gold are equal to 1,02,14,400 grains when there are 96 raties in a tola) which are adorned with best specimens of the art of jewellery work and inscriptions. It had cost the State six lacs of rupees and it was presented to His Majesty by Bebadal Khan along with candles and lamps. By his command the fence was arranged round the grave and lamps and candles were hung up. But in 1052 A.H./1642 C.E. this golden fence was removed because it was thought that such a costly thing was not proper to be kept there. Another *mahajjar* (fence) with *jalis* of marble around the Sarcophagus was arranged which cost the State only fifty thousand rupees. It had a door of *yashab* (Jade stone) which was prepared at the cost of thousand rupees. (Kazbohi, Vol.I, pp.551-2 and Abdul Hamid Lahori, Vol.II, p.626).



Sectional Elevation of the Main Mausoleum



Close up of the Cenotaph with inlay work



Elevation

The Taj Mahal is a double-storeyed edifice, wherein the central octagonal hall towers beyond the second floor (21.70 m above the platform), its ceiling being at a height of 25.48 m above the platform. The expansive terrace on the second floor is occupied mainly by the four domed cupolas, miniature turrets (four on each face) whose tops from a distance have the semblance of stylus, and the circular drum of the voluptuous central dome of the Mausoleum. On this drum the name of Bhola is inscribed in *Nagari* characters. Even a casual observation round this magnificent fabric is sufficient to discern that the external elevation of the four longer sides is identical, while that of the four shorter sides is of similar patterns unto themselves.

One of the interesting features extant in this building of appreciable dimensions and containing so many chambers, recesses and galleries, all with very thick walls, is the manner in which light is admitted within. As there is no real direct light into the main central hall, and "what does enter is broken by the trellis work that fills the openings. It is this that causes such a wonderfully cool and solemn effect on first entering."

The spandrels of the lofty apses and superimposed

archways are ornamented with delicate inlay work depicting flowers in their natural colours, the design being symmetrical on either side of the apex, but the pattern on the former is different from that on the latter archways.

On either side of the great apse, there are two superimposed archways, having a width of 5.97 m. While the apex of the lower arch is 9.17 m high, that of the upper is 8.11 m above the former's lintel. Both archways contain central doorways 1.19 m wide and 2.51 m high, there being enclosed by fifteen panelled latticed screens. Their jambs have a breadth of 8.41 m, while the lintel is 20.69 m high. Each of the shorter sides of the Mausoleum also contained two superimposed archways, their patterns and dimensions being the same as described above. The inlay ornamentation and the spandrels of all the superimposed archways bears the same pattern and are symmetrical on either side of the apex. The apex of the arches have beautiful lotus buds. Further, their walls are also embellished with beautiful decoration engraved in blending colours.

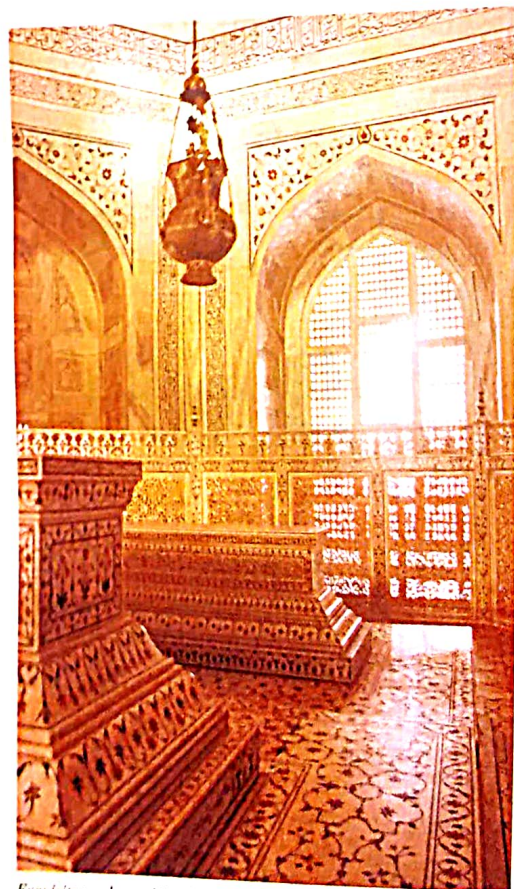
All archways are separated by very slender decorative columns, approximately 0.61 m in diameter and crowned with lotus capitals and domical cape complete with pinnacles of proportionate length. Those on either side of the great central apse are 33.10 m high

(including the spike 1.09 m in height, while those between the superimposed archways are a fraction over 27.55 m tall (including the spike). Through their length, those columns are ornamented with a wavy design called *lahria* in alternating black and white marble.

The arrangement of the various chambers and galleries on the first floor is similar to that below, except that there is no floor for the expansive central octagonal space, which extends from the ground floor to the ceilings of the hemispherical inner cell of the double-dome and which at the apex attains a

height of 25.48 m. Everywhere the surfaces are covered with inlay decoration in matching colours, very pleasing to the eye.

In the centre of the top floor is situated the drum of the gigantic bulbous dome to its floral cap apex in the form of an inverted lotus and extends 34.32 m in height. Above this peak stands the 9.33 m gilt pinnacle of brass whose total weight is 830.75 kg. (four fifths of a ton). It comprises four globular shapes one above the other and the crescent. The apex of the bulbous dome is 58.83 m and the top of the pinnacle 68.15 m in height above the platform. Since the platform is 5.61 m above



Exquisite workmanship of the *Sacrophagi*

the Great Basement and the latter 1.22 m above the garden level, the top of the pinnacle is therefore 74.09 m above garden or ground level. As a comparison, the Taj Mahal is higher than the famous Qutub Minar of Delhi (72.54 m) by about 2.44 m. However, as a point of interest to visitors, the height to which it is possible to ascend on the latter is over 30.48 m higher than that on the Taj Mahal. It is because of gradual elevation of the Taj Mahal that does not appear that it is higher than Qutub Minar.

The drum extends 11.46 m in height, its outer and inner diameters being 26.67 m and 18.56 m respectively. Its shell is thus 4.08 m thick. The outer diameter of the bulbous dome at its maximum bulge measures 28.55 m, the inner 20.91 m, the shell thickness at that level being 3.75 m. It may be observed that the maximum bulge dimension of 28.55 m is exactly half of 56.69 m, which is the length of a side of the ground plan square of the Mausoleum. Towards the crown of the dome, the thickness decreases to a minimum of 2.44 m. The inner shell of this double-dome is only 1.22 m thick at the ceiling apex. The hemispherical cap of this inner shell has a diameter of 18.29 m.

If we analyse all these dimensions it would be observed that the two ingenious architects had very carefully worked out the mechanics to produce well balanced proportions, which go

to form the most beautiful dome in Indo-Muslim architecture.

In regard to the dome of the Taj Mahal, the most beautiful double-dome in the world, W. Emerson observes: "In the centre rises the huge bulbous dome which forms the grand central feature of the Taj. It springs from a plain straight circular shaft, which rises to about the height of the tops of the smaller domes. On an occasion, when the attendant of the Imperial tomb in the spacious central chamber uttered "Allah-O-Akbar" in a normal tenor of his voice, the effect was simply amazing. Within the fraction of a second, the sound waves of his voice reached the ceiling of the vault, and showered back in thousand echoes in a quick series of musical reverberations, as if they emanated from the other side of the world—almost as if from another dimension: they gave me an eerie feeling of make believe that the echoing voices were those of the ethereal domain."

The above mentioned marble cupolas stand directly above the four octagonal chambers on the ground floor and the first floor of the Mausoleum, which indicates that the architects of the Taj Mahal made it a point to maintain proper symmetry at all levels from the platform to the roof of the Mausoleum, thus ensuring the required support in stress and strain at each stage to the top of the Mausoleum.

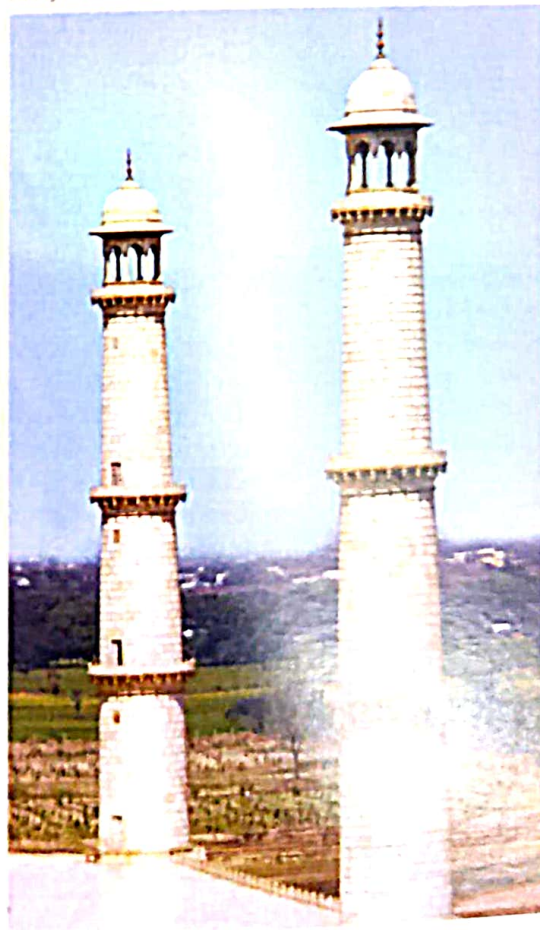
Minarets

Let us return once more to the ground floor of the Mausoleum, coming out of which may be seen the tall conical towers, slender and graceful, which are reminiscent of those on a smaller scale atop the main gateway of Akbar's Mausoleum at Sikandra, and which are sited at the angles of the massive marble platform. These artistically designed three-tiered minarets of circular cross section measuring 5.60 m at the base (which stands in the

centre of an octagonal pedestal 6.09 m in diameter and 0.85 m in height above the platform) taper towards the top where the diameter decreases to about 3.54 m, that is, a little more than half of that at the base.

The only point of entry into each minaret is through a rectangular door, 1.83 m in height from sill to lintel and 0.79 m broad, similar doors being provided on the first and second floors where they open to their respective balconies. Approximately 2.44 m below the

View of the Minarets on the east



level of each balcony, there are rectangular openings for the admittance of light and ventilation into the interior. All these doors and openings face the shorter side of the Mausoleum and thus lie on the same vertical line from the base of the minaret to the base of the kiosk atop the third storey, the arrangement being in accordance with the general scheme of symmetry.

Throughout the height of the minaret equal to the vertical line stated above and through the centre of its cross-section; runs a solid core structure conical in shape with a base diameter of approximately 5.79 m reducing to 4.02 m at the top. This strong core helps in ensuring the stability of the minaret. Round this core is a winding staircase connecting the door at the base to the balcony atop the third storey, comprising 51 steps in the first storey, 49 in the second and 58 in the third, each step being about 0.20 m high. These three stages are interrupted at the bracket-supported beautiful balconies whose respective heights connecting from the base are 11.22 m (including its pedestal of 0.85 m comprising three steps), 10.39 m and 11.89 m. The diameter of these balconies in like order are 6.58 m, 6.09 m and 5.49 m, and round their perimeter edge runs a low marble railing, the ambulatory in each case being 0.58 m broad projecting from the external face of the minaret. The balconies are supported on a system of brackets of elegant

design below which the ornamentation consists of a series of attractive rings.

The top of the third storey is adorned with a kiosk or cupola erected on octagonal base (3.54 m in diameter) and atop a 0.85 m high pedestal which is immediately above the circular balcony. The lovely cusped arches supporting the marble dome are 2.41 m high, eight elegant pillars demarcating them. This dome, measuring 3.47 m diametrically, has a dripstone (*chhajja*) projecting about 0.91 m round the edge of the domical base. The lotus decorated apex towering 6.40 m about the sill of the arches towering 6.40 m above the sill of the arches is crowned with a 2.10 m tall and gilded pinnacle. The total height of the minaret (from base to pinnacle top) is 42.71 m above the lofty platform, that is, 49.77 m above garden level.

Speaking of minarets, a lay observer expects the height of each succeeding storey to be less than the one immediately below, as for instance is the case in the Qutub Minar. But, with the Taj minaret of the third storey is the tallest and the second, shortest! This arrangement appears lopsided at first sight, but there is more than meets the eye. The dimensions of the three storeys as also the overall height of the minaret here have been so fixed as to achieve the best effect of perspective and balance of proportion as possible. There is also some element of optical illusion.



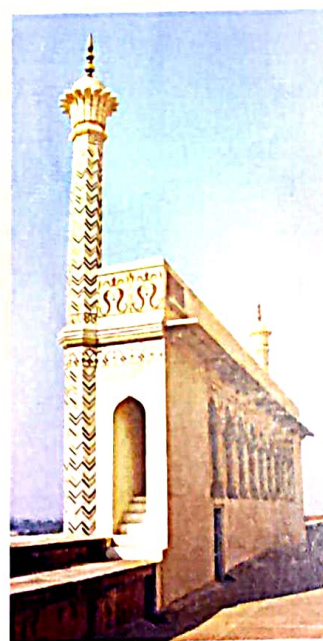
Ornamentation of The Taj Mahal

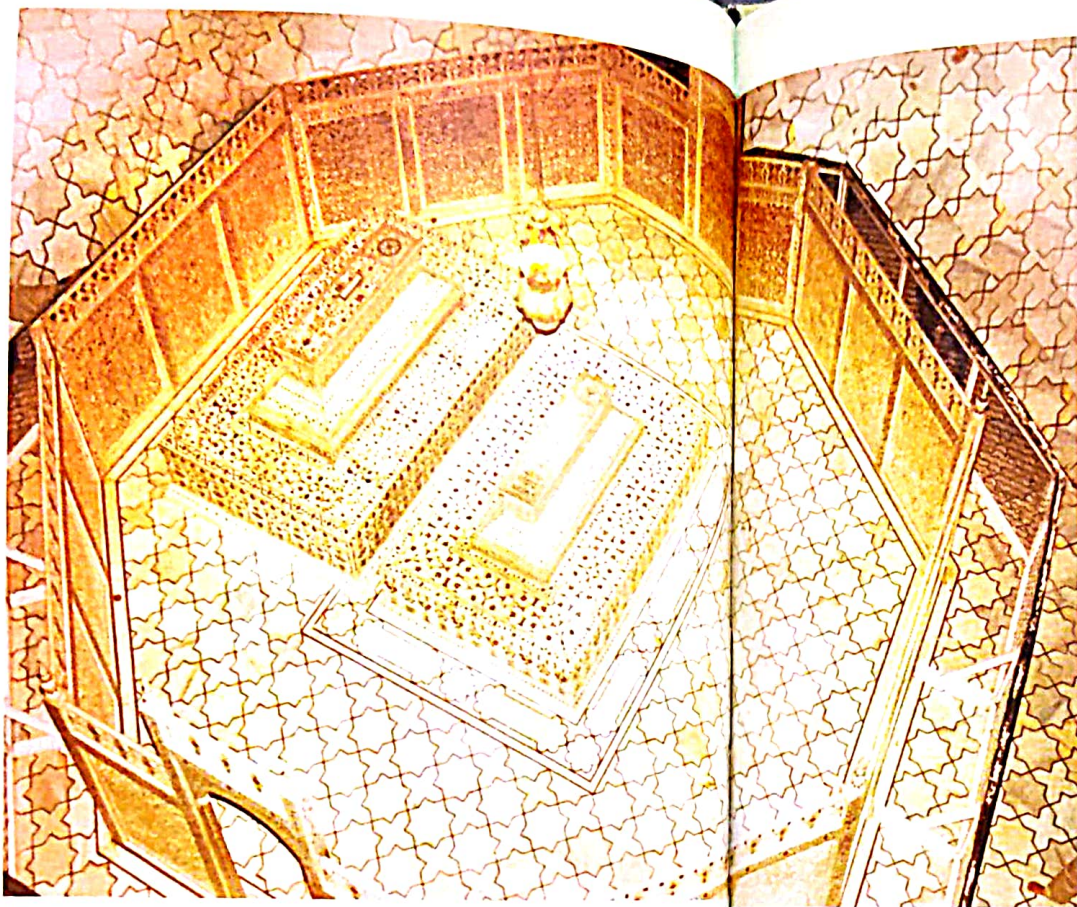
There can be little doubt that ornamentation of the Taj Mahal was commenced only after the Mausoleum had been completed in brick. It was then covered with marble encasing, which included not only the lovely carvings in the relief particularly evident in the dados, but also the intricate and the elegant inlay and the superb calligraphy. Since this task of embellishment was of a highly specialised and delicate nature, its accomplishment must have entailed an appreciable period. In this context we have to take into consideration the age-old type of tools and implements employed by the craftsmen, and the hundred percent accuracy essential in this kind of embroidery—fine craft as it involved the production of fragile minute pieces of innumerable different shapes from precious and semi-precious stones to form a perfect fit into the cavity fashioned in the marble slab.

About fifty different varieties of precious and semi-precious stones were employed in the inlay work in the Taj Mahal. In several instances there appear to be no exact English equivalents for the medieval nomenclature of the stones enumerated in the lists available to us.

It is no wonder that the contemporary court historian, Muhammad Salih Kambo eulogises thus: "In all the Mausoleum, both inside and out, skilful engravers have employed fine art, and a variety of coloured stones and valuable gems, the delineation of whose property and praise cannot be comprehended in the sea of language."

An appraisal of the elevation of the Mausoleum and the minarets drawn to scale by the Archaeological Survey of India revealed the following interesting results, which proved that the dimensions were not odd after all:—

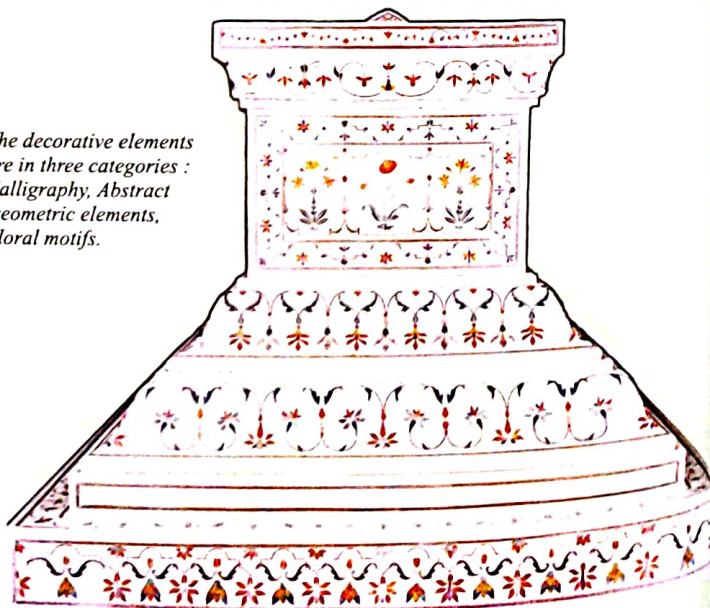




Intricate workmanship on the Sacrophagi



The decorative elements are in three categories :
Calligraphy, Abstract
geometric elements,
Floral motifs.



(a) The first storey gallery of the minarets is level with the first floor of the Mausoleum ;

(b) The second storey gallery of the minarets is level with the second floor of the Mausoleum ;

(c) The third storey gallery of the minarets is level with the top of the drum of the central dome, whence the latter springs ;

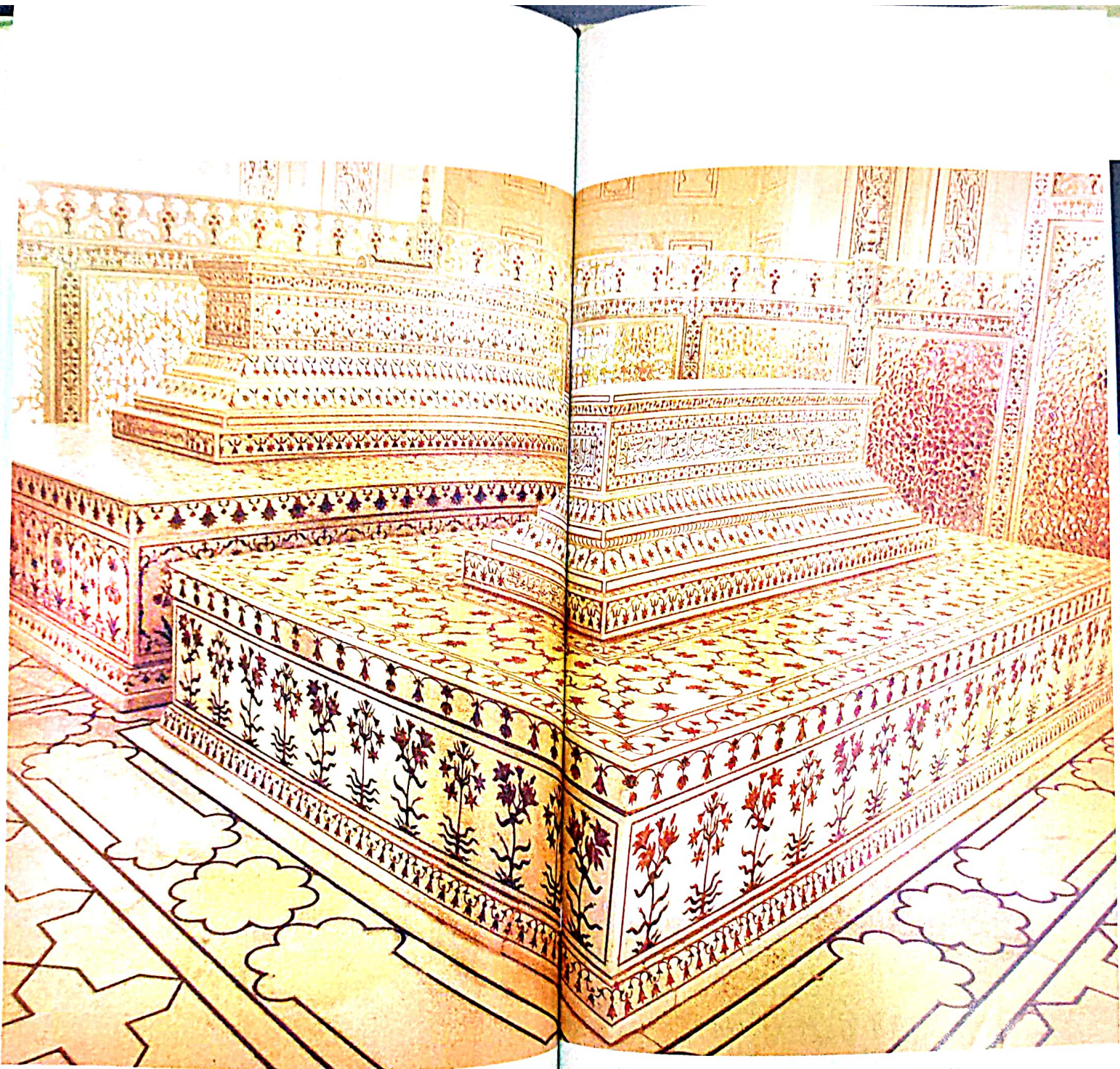
(d) The *chhajja* (eave) of the cupola atop the minarets is level with that whence the curves of the dome commence to bulge ; and

(e) The pinnacle of the minarets is level with that of the maximum bulge of the dome.

The above would point to the fact that the dimensions had been fixed as a result of deliberate calculations as also with the idea to achieve the best perspective effect.



Decorated dado panel of Main Mausoleum



Rays of light falling on the Sacrophagus create a magical effect on the chaste

marble giving the impression that it has been thinly coated with gold



The Royal Sarcophagi

In the foregoing, we have already alluded to a general description of the central octagonal hall amidst which lies the exquisite eight-side marble net-work, and their respective dimensions. The arches of this hall, which more appropriately may be described as the Cenotaph or the Sarcophagus chamber, are made of the finest marble, in fact so chaste that, when the rays of light scooping through the double perforated

marble screens fall on it, a sort of miracle occurs, because it seems that this marble has been thinly coated with *sang-i-tila* or gold stone, the precious particles of which have been set in its smooth texture.

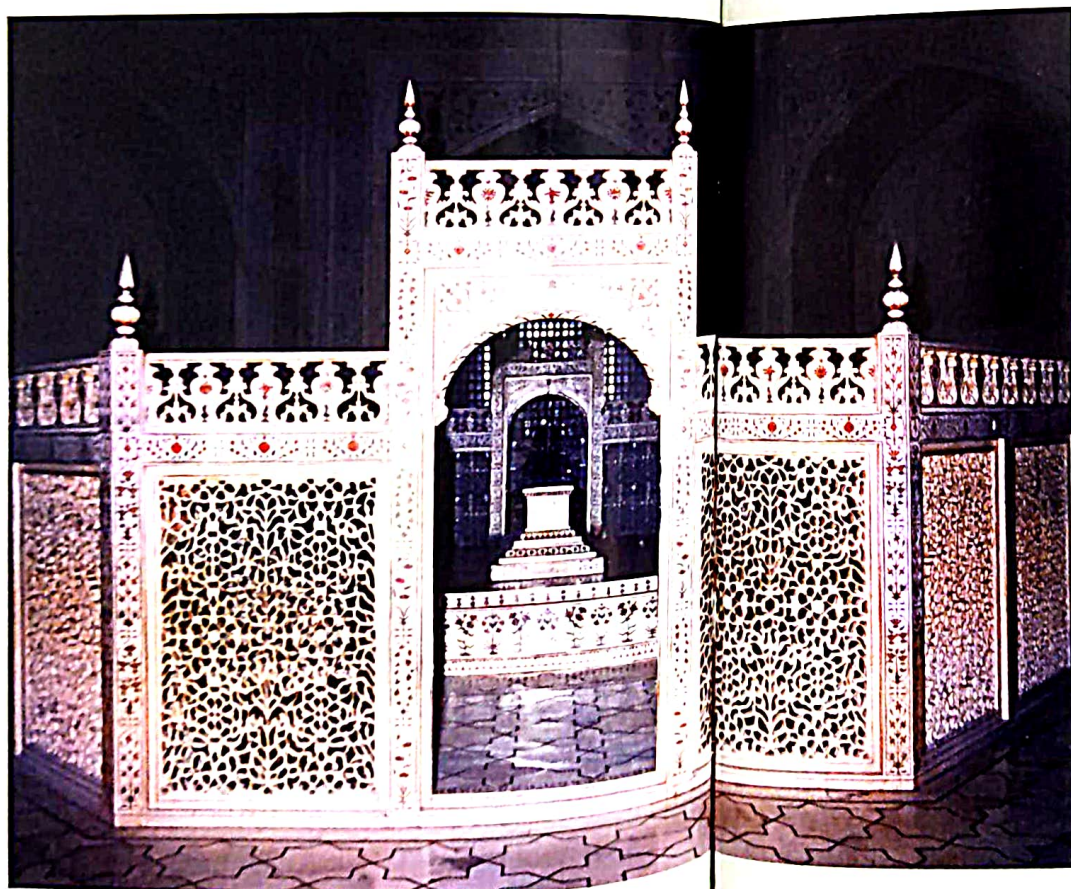
The front of the arches, apart from the masterly calligraphy comprising quotations from the Holy Quran, are embellished, with the most gorgeous ornamentation in the form of plants, bouquets, buds opening

and closing, blossoms partly blown or in full bloom, and leaves bent by the breeze. They are so natural and true to life that unless observed closely it is difficult to discern that they are composed of pieces of precious stones so firmly and elegantly embedded in marble.

It is amazing but true that an ornamented marble panel depicting a bouquet of flowers contains several hundred pieces to form the mosaic work, and in a single flower there may be as many as fifty pieces of valuable

stones of bright and natural colours, what is more, these pieces are closely and accurately embedded that it is impossible to pass a needle in the partings. They are in fact so faultlessly enjoined that the composite whole of the particular ornamentation ensemble appears as if cut from a single variegated block : And yet, it is indeed astonishing that the ribs, veins and the extremities of the pointed edges of the leaves are all so clear and life-like in natural colours, so much so that an account of the superb velvet finish, only the discerning eye of a Gormain Pilon, Banvenuto Cellini or Jean Goujon can fully appreciate this fine and most delicate craftsmanship of the unexcelled Indian *pietra-dura* workers.

The Sarcophagi or imitation tombs of the Emperor and the Empress are situated within the enclosure of the fine and delicate textured marble screens, which lies in the middle of the Cenotaph chamber. The Sarcophagus of the Empress occupies the centre of the marble screen enclosure as the Mausoleum was specifically built for internment of her remains, while the Emperor's Sarcophagus is here as a matter of fate. It is situated six inches to the west of the Empress'. Being that of her lord and master, his Sarcophagus is a span higher, and is distinguished by the symbol of *qalamdan* or pen-box.



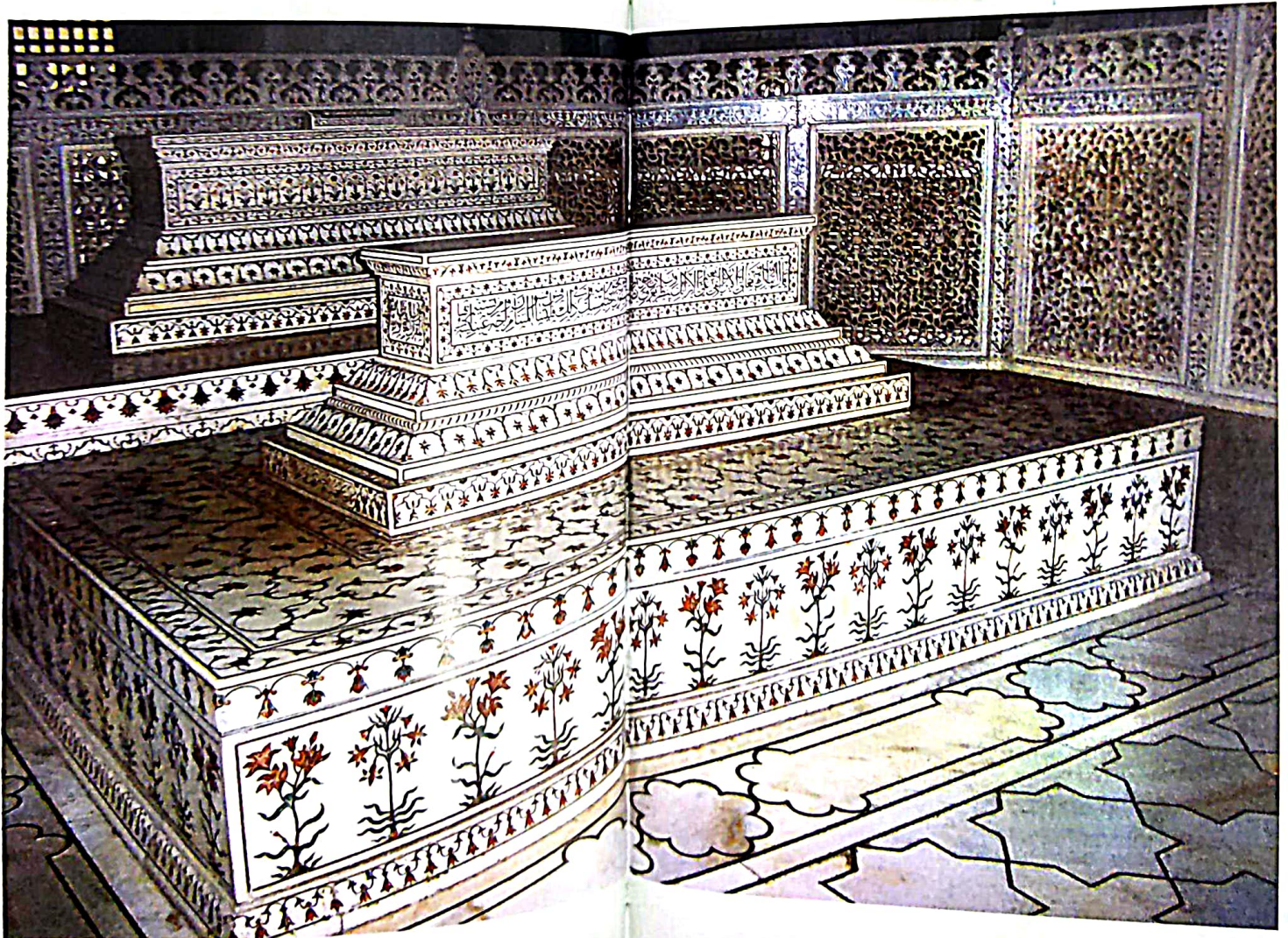
View of Screen enclosure of Main Cenotaph Chamber from South

Above Mumtaz Mahal's Sarcophagus are inscribed the ninety-nine names of God. On its north side, the inscriptions reads: "The Almighty is the Everlasting. He is Sufficient," and "God is He beside whom there is no God, He knows what is concealed and what is manifest. He is the Merciful and the Compassionate." On one side of the Sarcophagus is engraved

"Nearer unto God are those who say 'our Lord is God'. The most magnificent inscription here is: 'The illuminated sepulchre of Arjumand Bano Begum, entitled Mumtaz Mahal, deceased in 1040 A.H. (1631 A.D.)' the inscription on Shah Jahan's Sarcophagus relates: 'The illuminated sepulchre and sacred resting place of His Most Exalted Majesty, dignified as

Rizwan, having his abode in Paradise and his dwelling in starry Heaven, dweller in the regions of bliss, the second Sahib Kiran, the second Lord of the constellation, Shah Jahan, the King Valiant,

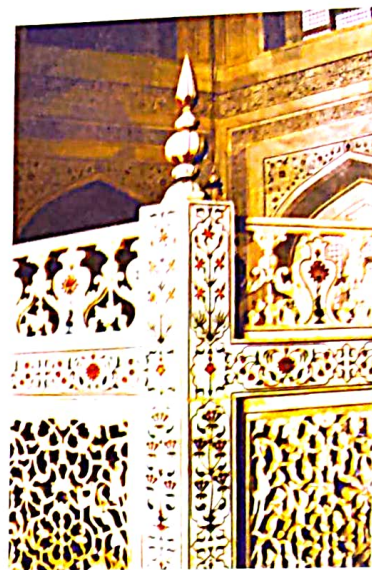
may his Mausoleums ever flourish, and his abode be in the Heaven. He travelled from the transitory world to the world of eternity on the night of the 28th of the month of Rajab 1076 A.H. (1666 A.D.)."



View of graves of Mumtaz Mahal and Shah Jahan

One of the conspicuous items of decoration in the Cenotaph chamber is a very beautiful and shapely lamp which is suspended from the ceiling of the Cenotaph chamber and directly above the Sarcophagus of Mumtaz Mahal, regarding the installation of which the Annual Progress Report of the Archaeological Surveyor, Northern Circle, Agra for the year ending March 31,

1909, on page 8, states that "On the 16th February, 1909, His Honour the Lieutenant Governor installed within the Cenotaph chamber a handsome lamp of bronze inlaid with gold and silver, the gift of Lord Curzon. It is suspended centrally over the tomb of Mumtaz Mahal and is a worthy and fitting tribute to the wife of Shah Jahan."



Close up of the Cenotaph enclosure

Interior of Main Entrance Gate





The Mortuary Vault

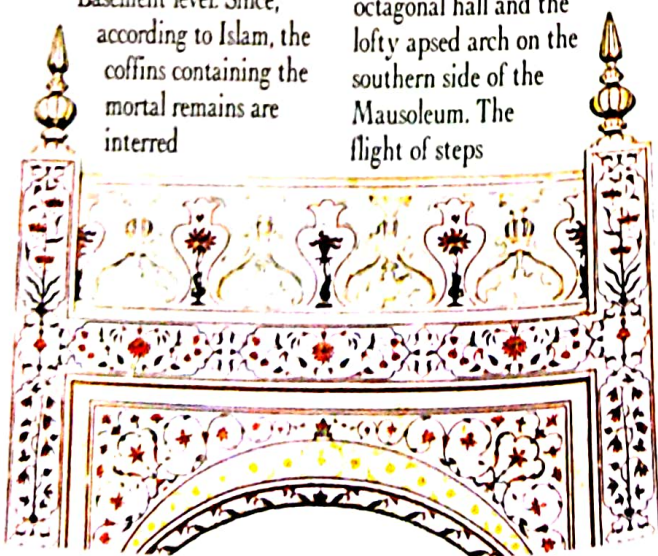


Directly below the imitation tombs (Sarcophagi) of the Empress and Emperor are the real graves housed in the Mortuary Vault, rectangular in shape, measuring 8.17 m north-south by 6.95 m east-west and its ceiling being 4.81 m above the floor. As the roof is approximately 0.43 m in thickness the base of the grave-stones coincides with the Great

Basement level. Since, according to Islam, the coffins containing the mortal remains are interred

in the earth, their base would obviously be below the ground level. This would mean that the base of the burial pits is about 2.26 m below the grave-stones in the vault, which is wrought in marble.

Access to the Mortuary Vault is provided through an oblong opening in the antechamber lying between the central octagonal hall and the lofty apsed arch on the southern side of the Mausoleum. The flight of steps



from this opening to the threshold of the vault below constitute a passage 10.64 m in length, going down which gives one the impression of descending into an Egyptian pyramid.

The door providing entry into the mortuary chamber is 2.23 m high by 1.22 m abroad. According to popular belief, the original door was fashioned in pure silver embossed with exquisite ornamental designs, which were kept so well polished that a certain amount of light was reflected on the lower part of the descending passage. Later, in the time of Surajmal, ruler of the neighbouring kingdom of Bharatpur, this lovely and costly door was removed by his Jat Army when they invaded Agra in 1764.

Taj Ganj

Right opposite the main gateway of the Taj Mahal and in the middle of the southern perimeter wall of the spacious Jilaukhana, the square where the Imperial retinue and body guard of Shah Jahan used to wait while the Emperor visited his deceased queen's grave on Fridays as and when he was at Agra, is the lovely stepped gate known as the Sirhi Darwaza. This opens into what is now known as the locality of Taj Ganj but formerly called Mumtazabad, a flourishing township in the halcyon days of the seventeenth century period of the pompous Shah Jahan.



Death & Burial of Shah Jahan

Shortly after his seventy-fourth birthday, on 17th or 18th January 1666, Shah Jahan fell ill with dysentery. He was confined to bed for two weeks and became very weak, despite all the efforts of his physicians, he found his end was very close. On the evening of 31 January 1666, lying in the Shah Burj, he asked the ladies of the *zanana*, in particular Akbarabadi Mahal, the esteemed consort of his later life (p.120), to care for Jahanara, and recited with her the *Kalima* (the Islamic profession of faith) and verses from the Quran, after which he died. Jahanara and the other

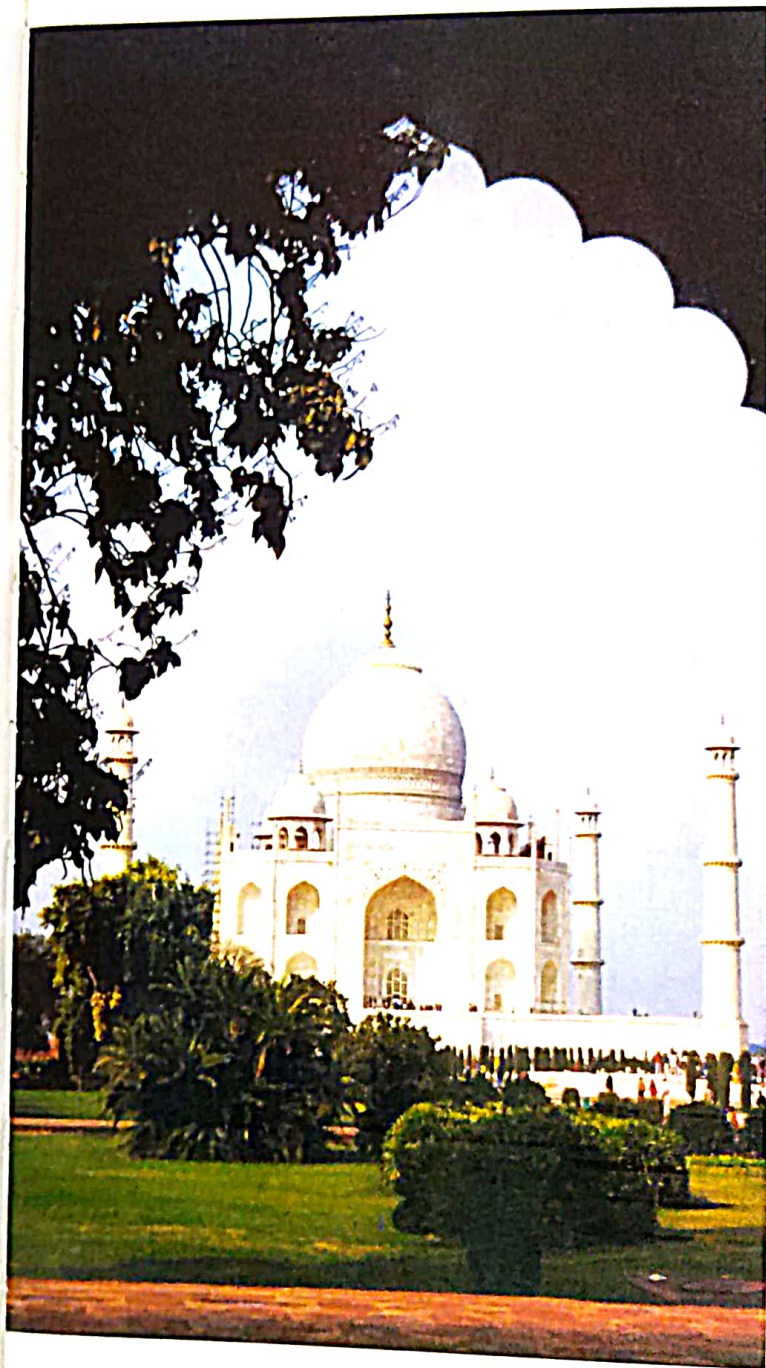
ladies broke into tears and cried with laments, and wore mourning dresses.

Jahanara wanted a grand burial for her father, but Aurangzeb was against public pomp and show for Shah Jahan. Aurangzeb ordered Hoshdar Khan, Governor of Agra, to send for two eminent Ulemas, Sayyid Muhammad Qannauji, who had been Shah Jahan's spiritual guide during his captivity, and Qazi Qurban, the chief religious Judge of Agra, to help with the funeral arrangements and the burial. The dead body was taken to one of the halls near the Shah Burj, washed according to the rites of Islam, and placed in a coffin of sandalwood. The coffin was carried down the stairs of the Shah Burj, and the door at the bottom, which had been

closed during Shah Jahan's imprisonment, was specially opened for this occasion. From the gate in the Fort's outer wall the coffin was taken by boat to the Mausoleum. There Sayyid Mohammad Qannauji and Qazi Qurban spoke the funeral prayers with some of the dignitaries of Agra, and the coffin was laid in the lower tomb chamber next to that of Mumtaz Mahal. Later the Sarcophagus of marble higher than that of Mumtaz Mahal was constructed and the pen-holder or *qalamdan* was covered with poppy flowers and an inscription was carved in relief giving the date Shah Jahan's death. The Sarcophagus of Shah Jahan is larger than that of Mumtaz Mahal whose sides have inlaid ninety-nine names of Allah with Quranic verses on the head side.



Detailed of inlay work in the Main Mausoleum





Useful Information

The Taj Mahal, an embodiment of love and romance, is located in the city of Agra that lies approximately 204 km to the south of Delhi. If you are planning a trip to explore the beauty of this splendid monument given below are the various ways of travelling to the Taj Mahal in India.

How to reach

By Air

The fastest way of reaching Taj Mahal, Agra is by air. The city of Taj, Agra, has its own airport that is around 7 km from the city centre. Indian Airlines operates flights to Agra on a daily basis.

By Rail

There is a good network of trains connecting Agra with the rest of the country. Apart from the main railway station of Agra Cantonment, there are other two stations also, that of Raja ki Mandi and Agra Fort. The main trains connecting Agra with Delhi are Palace on Wheels, Shatabdi, Rajdhani, and Taj Express.

By Road

There are regular bus services from Agra to a number of important cities. The main bus stand of Idgah has number of buses running for Delhi, Jaipur, Mathura, Fatehpur-Sikri, etc.

Local Transportation

After reaching the city also, you need some sort of local transport to reach Taj Mahal. You can easily get a taxi, tempo, autorickshaw or

cycle rickshaw in the city that will take you to your destination. Prepaid taxis are also available if you want to visit the various places near the city. For the adventurous kind, there are bicycles that can be hired on hourly basis from different parts of the city. Since, diesel and petrol vehicles are not permitted in the Taj Mahal area, you can find battery operated buses, horse driven tongas, rickshaws and other pollution-free vehicles there.





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The poet Rabindranath Tagore said

"You know Shah Jahan,
life and youth; wealth and glory,
they all drift away in the current of time.

You strove therefore,
to perpetuate only the sorrow of your heart.
Let the splendor of diamond, pearl and ruby vanish.

Only let this one teardrop,
this Taj Mahal,
glisten spotlessly bright on the cheek of time,
forever and ever"

