

SERGEI CHMELNIZKIJ

## THE MAUSOLEUM OF MUHAMMAD BOSHARO

An ancient edifice called the mausoleum of Muhammad Bosharo stands in the village of Mazar-i Sharif in the Zeravshan River valley, not far from the city of Panjikent. In this mountainous area many architectural monuments of pre-Islamic and early Islamic culture have been preserved. The mausoleum of Muhammad Bosharo, one of the most noteworthy among them, gave its name to the village in which it stands; Mazar-i Sharif means "noble sanctuary."

Although the mausoleum was mentioned in scholarly works as early as the 1930's, it did not become the subject of special scholarly attention until more recently. The first paper devoted to it and based on measurements and research on the site was published by L. Bretanitskii in 1958.<sup>1</sup> His article points out, among other things, that the various parts of the structure were built at different times, and he mentions some peculiarities of its layout and disposition on the site. Bretanitskii hypothesized that the portal of the mausoleum (one of the most beautiful in all Central Asia, it bears the original construction date of 1342-43) was erected later than the main structure, which he attributed to the late eleventh or early twelfth century.

A second article on the mausoleum, based on new measurements and further research, was published by V. Voronina and K. Kriukov in 1978. The authors introduced some new data regarding the architecture and published work on the tombs and the mihrab found inside the mausoleum. They also put forward a version of the sanctuary's construction history that was rather different from that offered by Bretanitskii.<sup>2</sup>

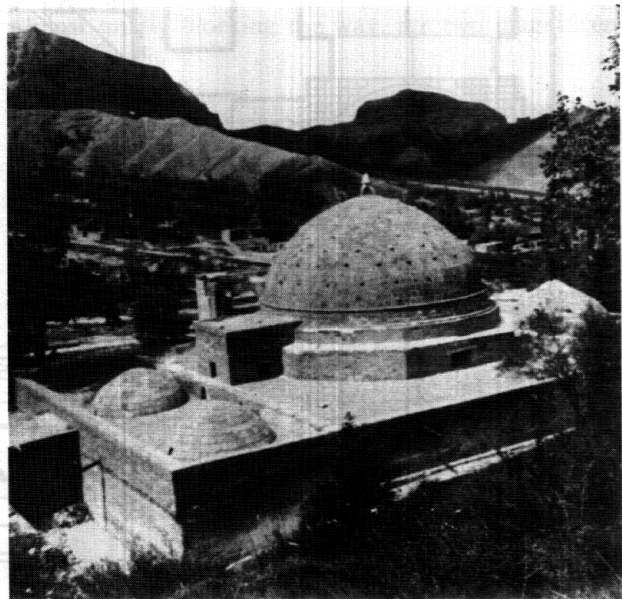
I shall attempt here to investigate the problem of the building's construction on the basis of my own observations. The mausoleum of Muhammad Bosharo is a monument of great historical and artistic significance, and in many respects it is unique. It is also a site little known to architectural historians outside the Soviet Union, and therefore solving the problem of its typology is not merely of regional interest.

The structure stands on a raised platform reinforced with stone, on the bank of a stream that goes dry in the summer. Its main façade faces the northwest, that is,

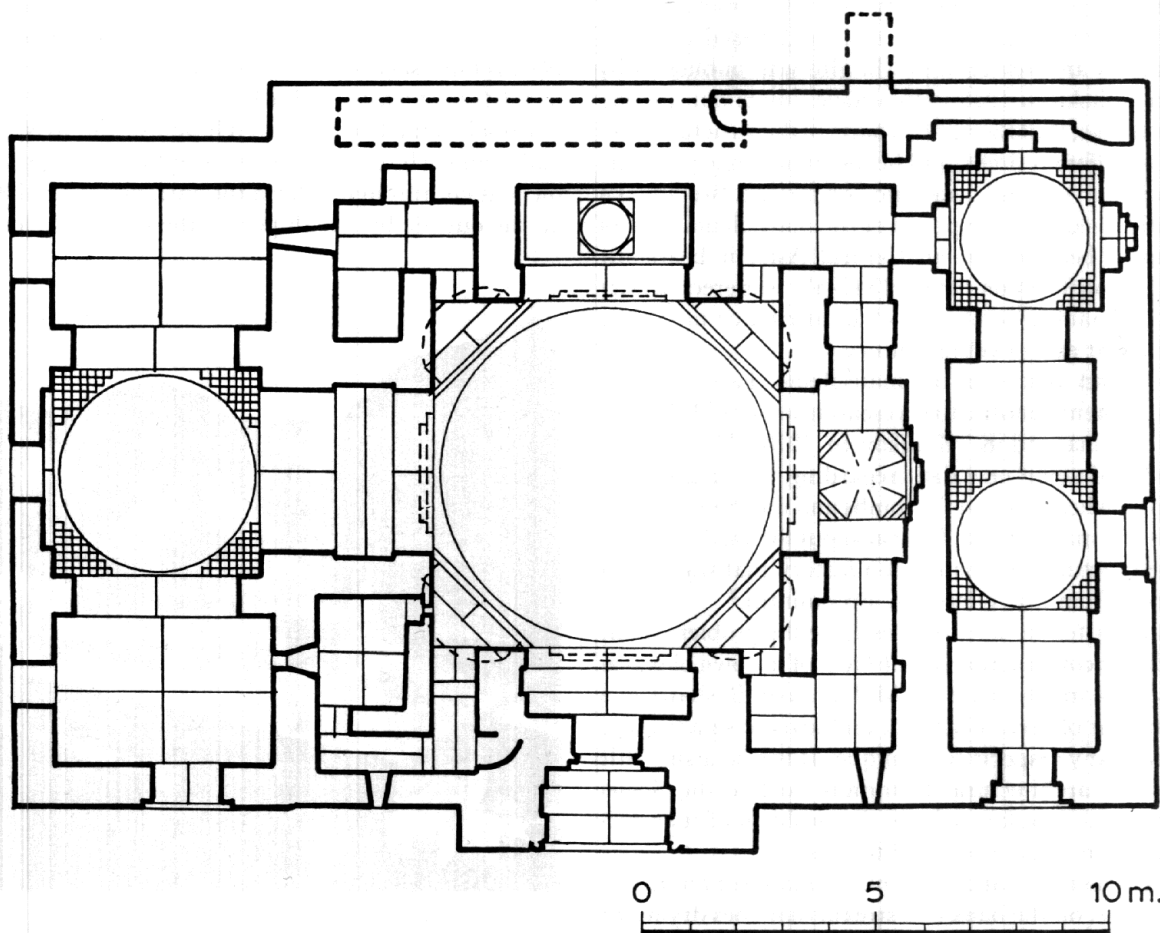
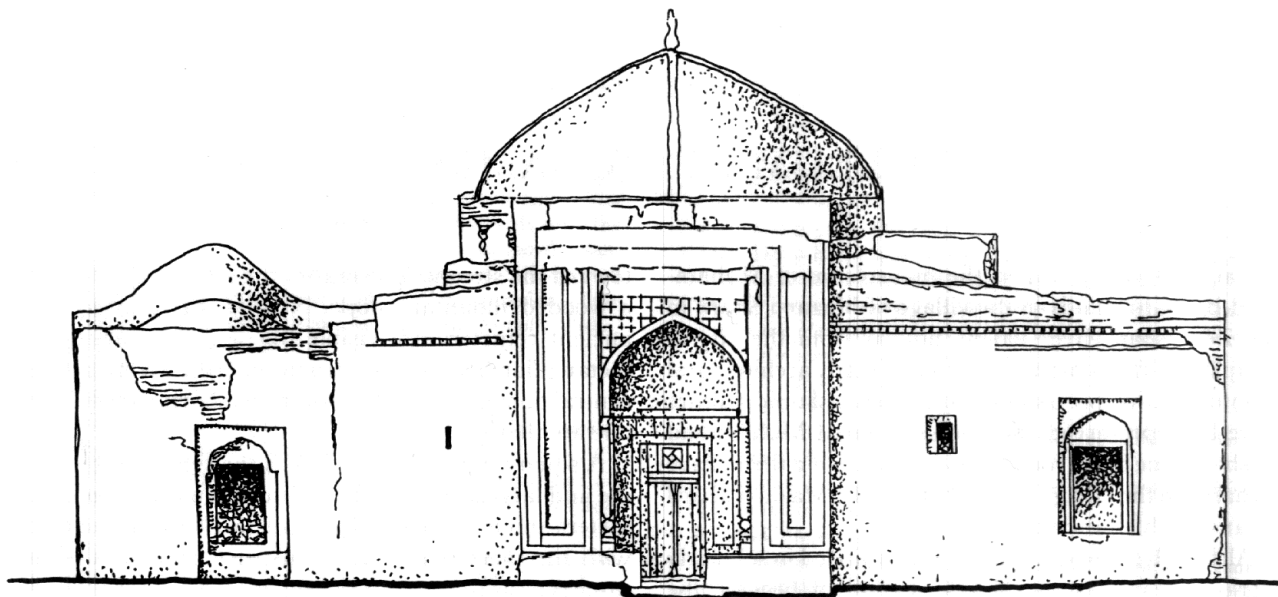
toward the stream. The rear of the structure is cut into a wooded mountain slope. Nearby, the graves of an ancient cemetery are visible (fig. 1). The rather low, rectangular body of the structure, crowned by a large central dome, consists of three parts sharply set off from one another (fig. 2).

A square domed hall serves as the center of the middle and largest section. The dome has a diameter of 7.6 meters and is supported by corner arches that, together with the piers (which are construed as niches of the same type as the arch supports), form a perfect octagon. The dome is set off from the lower walls of the hall by a horizontal ledge or molding (fig. 3). The dome itself has been rebuilt several times, and the present one, put up in 1964, is at least the third.

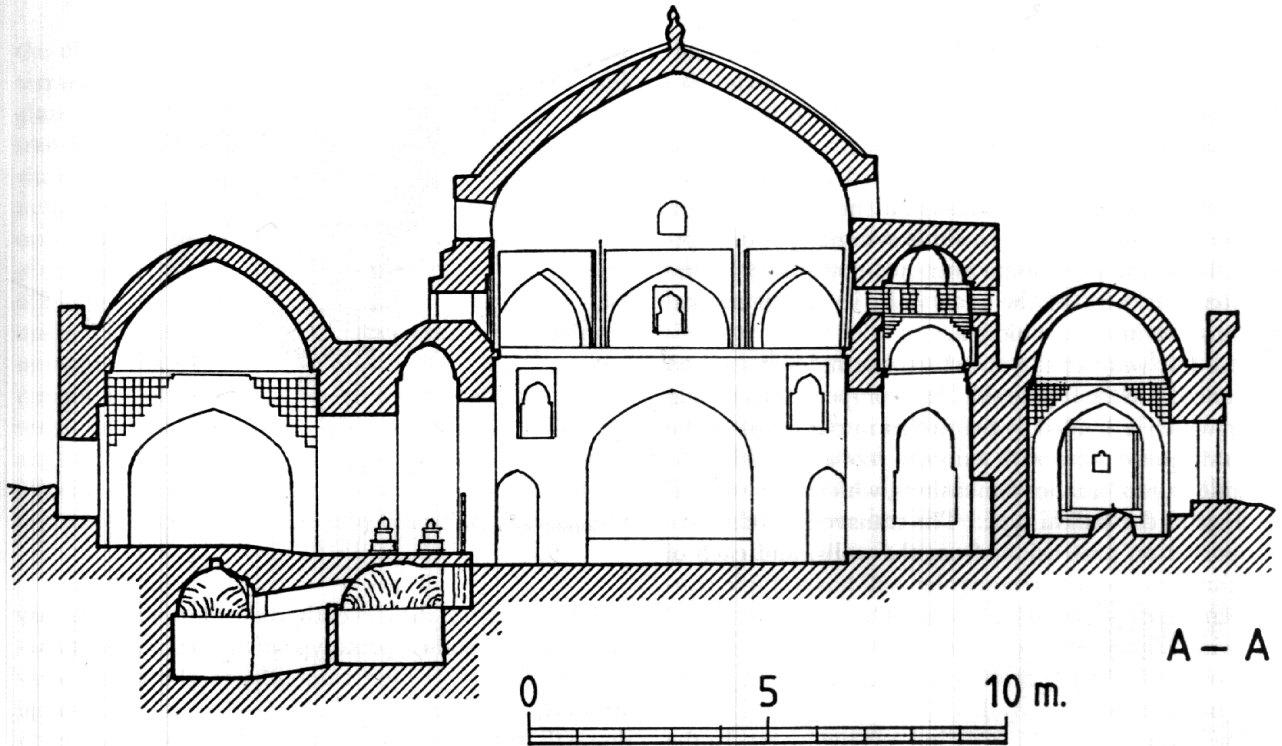
Broad arched niches stretch across the axis of the hall, and each of them has its own function. The front niche is cut through to form the entrance and is framed on the outside by a high portal; the rear niche forms a



1. Mausoleum of Muhammad Bosharo. General view from rear.



2. Façade (above) and layout (below) of the mausoleum as it is today.

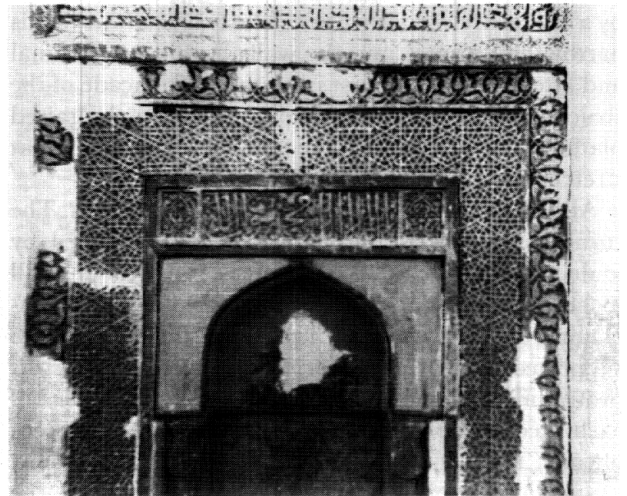


3. Longitudinal section.

loggia with a raised floor on which five tombs are to be found. The niche on the left has no back wall and serves as a passageway to the side wing of the structure; in the rear wall of the right niche is a mihrab. The striking decoration on the mihrab was made by carving on unfired clay (fig. 4). The floor of this niche, like that of the left-niche passageway, is also raised above the level of the main hall's floor. The sides of the right niche have vaulted ceilings and the central, square section of the niche is crowned with a small dome on an octagonal drum. The right niche, which resembles an altar, is thus emphatically set off from the other niches of the same dimensions. Passages through its side walls connect the niche with the corner rooms.

Four narrow passages in the front and rear walls in the corners of the hall lead into relatively small corner rooms. In the left forward chamber is a stairway that leads to the roof, passing by an intermediary landing, from which one can enter a small upper chamber. The front-right and rear-left rooms form an inverted L. The rear right-hand chamber is connected by a passageway to the rooms on the right side of the overall structure. Both the corner chambers on the hall's right side are connected by a passageway to the niche in front of the

mihrab. Although the left niche provides a broad passageway of 3.5 meters, it is impossible to use it as an entrance into the adjoining wing, because in its middle, almost totally blocking the way, are two magnificent



4. The mihrab.

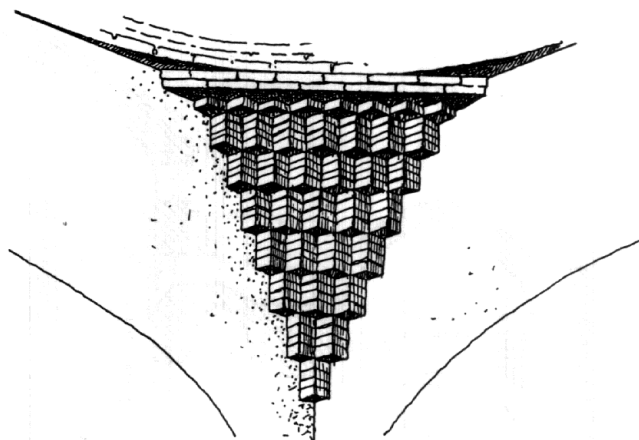
tombs decorated with carved, glazed terracotta. In addition, on the side of the main domed hall this niche, like the rear one, is blocked by wooden grillework.

Thus the central part of the overall structure consists of the domed hall and the four-sided band of rooms surrounding it. In this band, axial niches alternate with corner chambers. The even-sided symmetry is disrupted only by the protruding entrance portal and by the greater thickness of the rear wall, in which several narrow chambers are hidden.

The left wing of the structure has its own vaulted entrance from the façade side. It is composed of one long room which is divided by two arches into three bays: the central square room with a domed roof and two identical side bays of smaller dimensions, which have vaulted ceilings of the Balkhi type.<sup>3</sup> The transverse arches are supported on protrusions from the walls, and each of the three bays of the rectangular hall has a single window in the right (northeast) wall. The overall length of the wing is somewhat less than the depth of the central part of the building, causing a jog at the point where they meet at the back wall.

The right wing of the building has two parts. In the rear is a square, domed room with a mihrab niche in the right-hand (southwest) wall. A passage opposite the mihrab connects this room through the right rear chamber of the main hall with the central group of rooms. A wide vaulted passageway in the northwest wall leads into a long room whose dimensions are smaller than those in the left wing of the building, but identically arranged: the central part is square and covered with a dome and is separated from the two adjacent side bays by a lateral arch on either side. The two windows in this narrow hall are set into the walls on the longitudinal and lateral axes. The first is on the main façade of the structure; the second faces southwest. On the raised platform is a very long (more than 8 meters) tomb that stretches the entire length of the space.

All the rooms have vaulted ceilings and domes. The corner squinches of the main hall are completed by undecorated conch-like half-domes; there is a small niche in the corner. The remaining four domes (including the miniature one in front of the mihrab) are supported by a construction formed of rows of bricks protruding from the corner in such a way that the end of each successive row sticks out further than the preceding one. Taken as a whole, the form looks like a stepped triangular console that becomes broader toward the top, where it supports the dome (fig. 5). In the architecture of Central Asia, this construction technique was



5. Corner squinch.

widely used from the eleventh to the fourteenth century and clearly became a prototype of the decorative stalactite pendentives which camouflaged the actual constructions supporting the dome. The little octagonal dome that rises in front of the mihrab is in essence not a dome at all, but a closed vault — a form often found in the West (the Duomo in Florence, for example) but rarely in the Middle East.

The vaulted ceiling over the rear niche in the central hall is interesting for the quality of its construction: a smooth surface made of bricks that have been laid on edge to form a pine-tree or herringbone pattern. In the middle in a square recess, a small alabaster dome is set, made in the form of a rosette. This construction has no known close parallels.

In the course of the research carried out at the mausoleum site in 1966 a burial vault was found underneath the left wing of the structure. This narrow-vaulted room is located directly on the axis of the left wing beneath the central bay that supports the dome (figs. 3, 11). The crypt is connected by a passageway with an entrance chamber located a bit further, right underneath the majolica tombs already mentioned. The location of the entrance trap to this chamber coincides with the position of the wooden grating overhead that separates the central hall from its left axial passageway so that the crypt could be placed right on the threshold of the hall, but still outside it. Several skulls and some bones were found in the crypt.

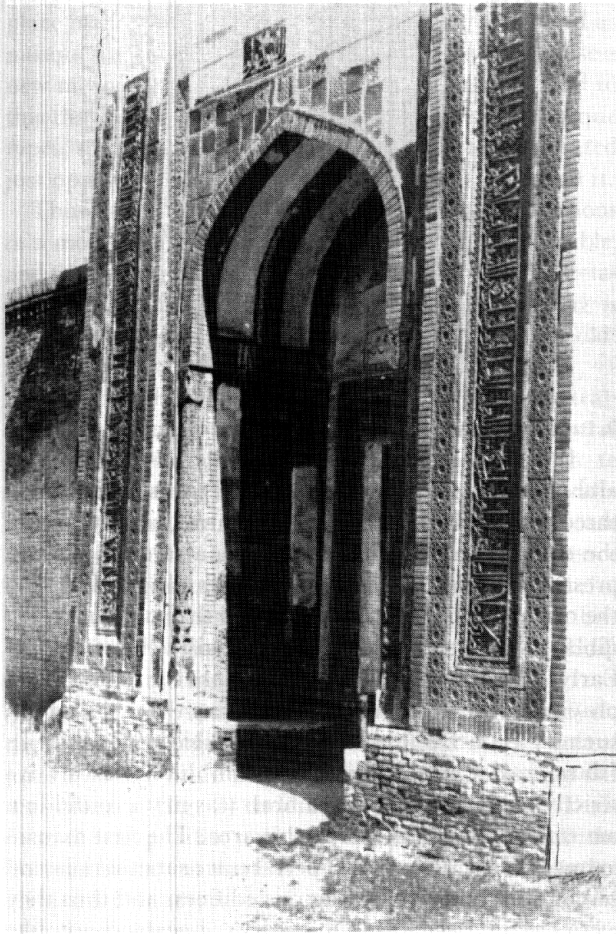
The time of construction of the mausoleum's very fine portal — the fourteenth century — may be determined not only by the date that is preserved on it, but by

the character of the rich decoration in which carved terracotta is composed with polychromatic tiles and glazed bricks (fig. 6). Precisely at this same time the transition in Middle Eastern architecture from a monochrome to a polychrome style was taking place, thanks to the application of colored majolica tiles, glazed terracotta, carved mosaic of the Karshi type and other kinds of decorative revetments. The portal of the mausoleum of Muhammad Bosharo exemplifies this transition. The major part of its decoration was executed in carved terracotta in its natural golden-yellow hue, but the tympanum of the arch is surfaced with majolica tiles of turquoise and blue with a delicate design, and the rectangles of the decorative panels, the bands with Arabic inscriptions and embellishments, are executed in carved terracotta and framed by blue glazed bricks. On

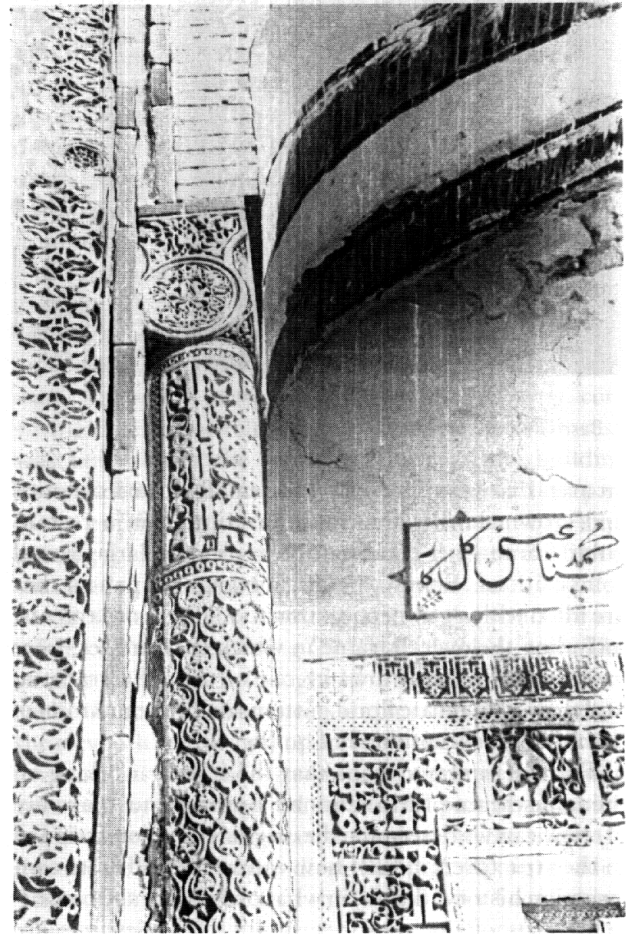
the basis of the portal, the traditional doubled bricks are separated by colored relief inlays.

The corner decorative columns that optically bear the arch of the portal also merit attention. They are made of terracotta cylinders joined without mortar and are covered with carved designs. The shaft, crowned with a lyre-shaped capital, is divided into several sections, each decorated differently (fig. 7). The cubical base is topped with an eight-sided prism on which rests the base of the column which consists of a hemisphere and a full sphere linked by cruciform bands that pass along their equatorial and meridian lines. The bottom of the shaft where it touches the top of the sphere is encircled by carved leaves in which one can almost see the transformed motif of the antique acanthus (fig. 8).

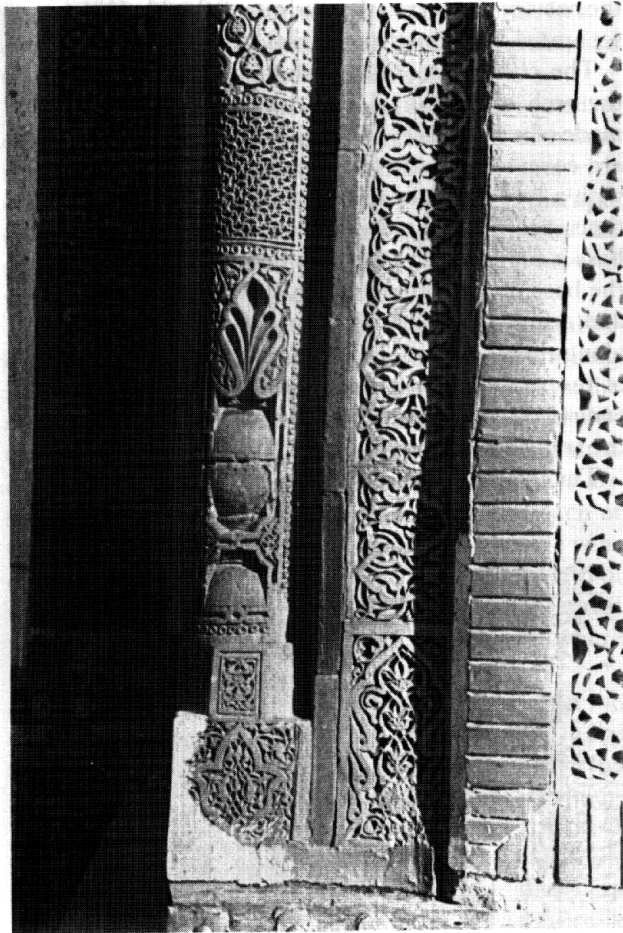
The panels on the side walls of the portal niche form



6. The portal.



7. Detail of a portal column shaft.

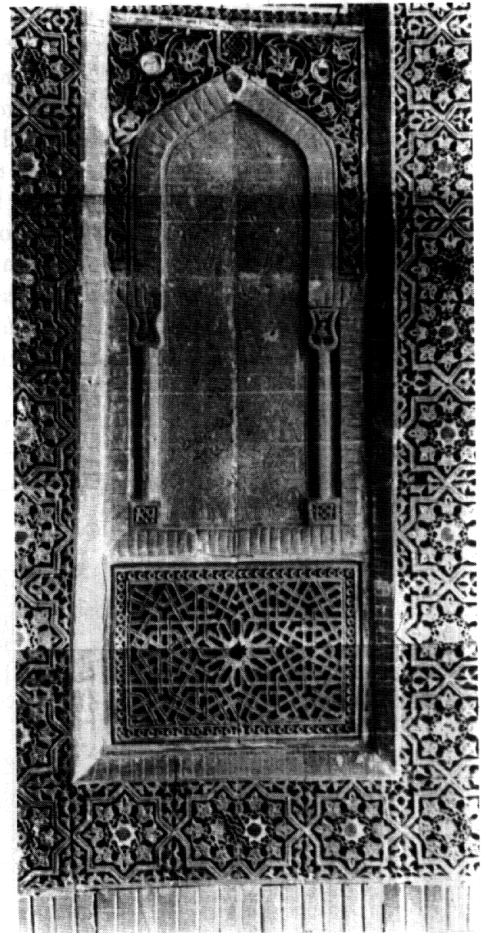


8. Base of a portal column.

an arch that is supported on the small faceted columns and crowned with an Arabic inscription in a rectangular frame — a combination typical of large portal compositions. Below this are rectangular panels that are filled with a geometric pattern. All these ornaments, including the overall frame in which they are set, were executed with great artistry out of carved terracotta, and the very delicate floral patterns on the tympanum of the arch are exceptionally fine (fig. 9).

The essential questions that the scholar working on the mausoleum of Muhammad Bosharo must face are (1) how can we determine the original function assigned to the structure? and (2) how can we establish its construction history, that is, in what order were the constituent parts of the structure built? The questions are interrelated.

A quick glance at the plan is sufficient to note both



9. Panel on the face of the portal niche.

architectural and functional differences among the three parts. The function of the central, square part of the edifice can be established without a doubt by the presence of the mihrab that is so strikingly set off and by the orientation of the whole toward the southwest (the qibla) — this structure was clearly built to be a mosque. Early Islam, with its rigid monotheism, prohibited praying on or over a grave, considering that the grave in such a case became the object of religious worship. In Islamicized Central Asia this prohibition was always strictly observed, and the mihrab was never found in a mausoleum or burial site in this area. The first mausoleums in Central Asia had been built as memorials and public sites and not as religious edifices, and thus they were oriented according to compass lines and not, like mosques, only toward the southwest, that is, toward Mecca. This traditional orientation was preserved later

as well. Not until the eleventh century, when Sufism began to spread into Central Asia, were the graves of honored spiritual masters transformed into sanctuaries (*mazar*). But the prohibition against praying on graves remained in force, and in order to resolve this contradiction a room for prayer (*ziaratkhana*), a memorial mosque connected to the mortuary chamber (*gurkhana*), began to appear. It was in this way that the two-chambered mausoleums characteristic of the countries in the Islamic world developed.

A tradition of burial by the entrance to the mosque did exist earlier, but it was always outside the mosque.<sup>4</sup> If, however, someone was buried in the mosque — and there were such cases — then it was because the building had ceased to be a mosque, and prayer would no longer be said there, although the edifice of course retained its original layout and arrangement, including the prayer niche. Cases are known of burials taking place inside old mosques that had ceased to be used as mosques because of their dilapidated state or because a new mosque had been built nearby.<sup>5</sup> One must add to this that, even allowing for the great variety of mosque types, the entrance to the mosque was as a rule located just opposite the mihrab and on the same axis with it.

Thus the combination in one structure of the functions of a mosque and those of a mausoleum was impossible, and the appellation “mosque-mausoleum” used by Bretanitskii, Voronina, and K. Kruikov for this building is incorrect, unless it is construed as meaning that the building was first a mosque and only later a mausoleum.

The central part of the building constitutes a central-domed mosque type. These are fairly rare in Central Asia: the best examples date from the eleventh to twelfth centuries, and their layout is characteristically much simpler than is the case here.<sup>6</sup> In the present case the complexity of the layout and design and the absence of any evidence that would suggest another date of construction allows us to date the building to the thirteenth or early fourteenth century, that is, it was built about the same time as the portal.

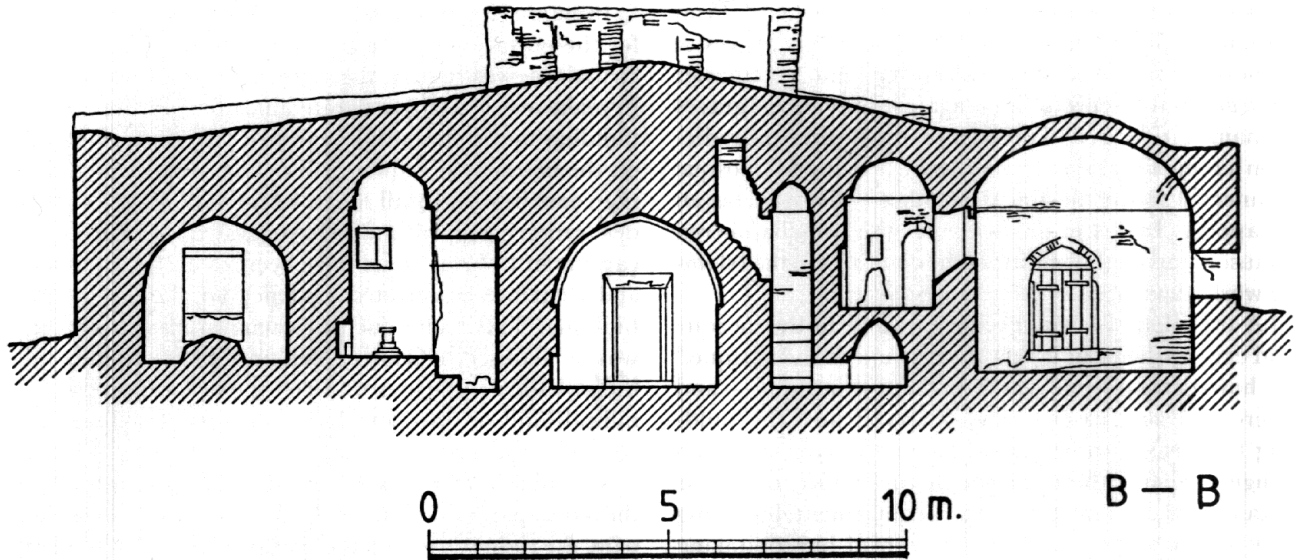
The left wing was added somewhat later. Not only do the dimensions of the bricks used differ, but the vertical joint that is visible in the corresponding place on the main façade (fig. 2) indicates a later structure. Built over the crypt, this part of the building was from the outset a burial monument. The right wing, composed of elements characteristic of two-chambered mausoleums (that is, a rather small domed hall with a mihrab and an extended *gurkhana* with a tombstone), had the same function as the left wing.

Bretanitskii considered that the entire edifice (except for the portal, which he considered to be of later construction), was built at the same time, and this led him to make a series of inaccurate analogies. He dated the building to the eleventh or early twelfth century based on the use in it of cellular sail pendentives (which did not come into use until much later) and of carved clay decoration on the mihrab. He suggested that the use of carving in wet clay must have been an archaic method and therefore constituted evidence for the age of the building. This technique of carving in clay, however, was in fact used in Central Asia until recent times, and the stylistic similarities between the decoration on the mihrab and on the portal demonstrate that they are contemporaneous.

Voronina and Kruikov consider the left wing to be the oldest part of the edifice. In their opinion the central part, the right wing, and the portal were constructed at the same time. This judgment is based on the observation that between the building and the portal there are no visible joints, evidence which is, to say the least, insufficient. When building with square bricks, as was done in Central Asia, the exterior rows were composed of alternating whole and half bricks. In order to connect a new part of the structure to the older building it sufficed to pull out the face's half bricks and replace them with whole ones (a process made easy by the use of clay mortar). Done in this way no joints were visible between the addition and the original structure.<sup>7</sup>

According to Voronina and Kruikov, the building was constructed in two stages. First the left wing, consisting of a three-arched gallery open to the southwest, was built. Later the remaining parts of the building were added to the left wing. They date the earliest part of the building to the eleventh or twelfth century, supporting their hypothesis with two arguments: the first is that the left wing is built of brick that measures 21–22 × 21–22 × 4 cm.; the remaining parts of the structure are made of brick measuring 23–24 × 23–24 × 5 cm. The smaller size brick is thought by the authors to be of an earlier type, and they cite examples of constructions of the eleventh century to support this claim. Their second argument is that the two window openings in the wall between the left wing and the central part of the building become broader toward the inside and the sills slope downward in the same direction (fig. 10, right side). The authors theorize that this would have been impossible had the left wing been built later than the rest of the structure.

In fact, however, square bricks with sides of 23–



10. Section through the entrance of the building.

24 cm., and even of 30 cm., were employed in construction in Central Asia as early as the ninth and tenth centuries. Numerous examples, including the mausoleum of Arab-ata, the mausoleum of the Samanids, the residential buildings of Varakhsha, and the palace of Kyrk-Kyz use them. There is no reason to consider one part of the building as being older than the rest, therefore, merely because it is constructed of smaller bricks.

Their argument about the layout and setting of the window openings is based on an odd misunderstanding. In the Middle Ages, small windows were always made to broaden, not to the outside, but toward the inside of the room, and their sills were slanted inward to increase the amount of light in the interior. This practice was not limited to the east. It is precisely how the four narrow windows in the walls of the middle square part of the building were conceived and built (see fig. 2), and it shows that the central part was built earlier than the left wing, and not vice versa.

Voronina and Kriukov offer no other supporting evidence to bolster their hypothesis. They are unable to explain the function of the left wing; and limit themselves to the rather cloudy statement that it was "an autonomous architectural organism."<sup>8</sup> They also fail to explain the function of the central part of the building and the reason for its having been added onto the earlier "organism." They do not mention the right wing at all.

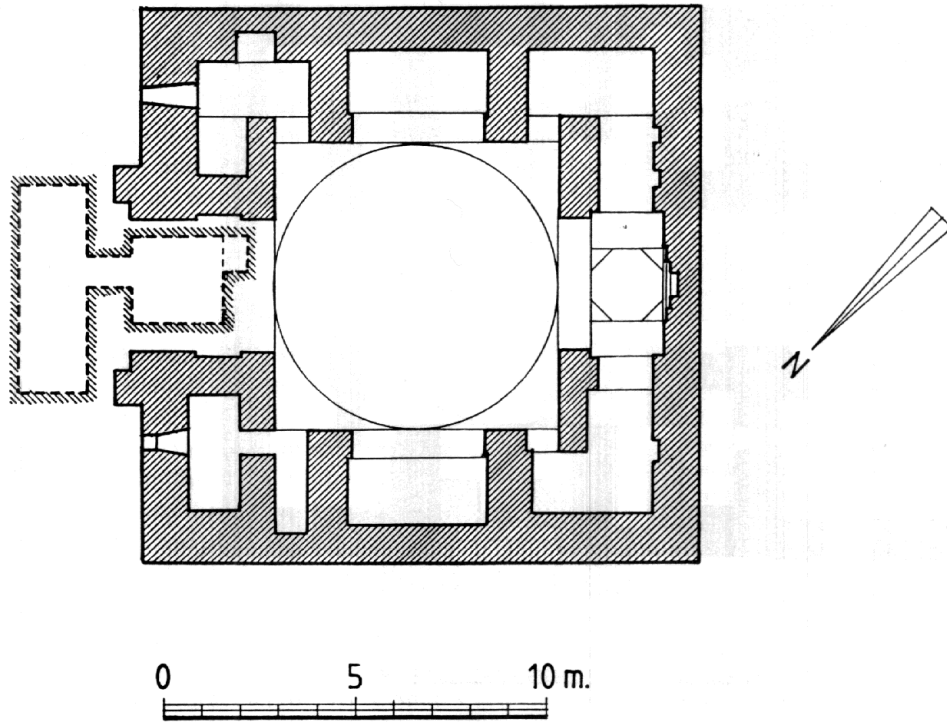
Another error made by Voronina and Kriukov is their remark that the small dome in front of the mihrab

supported on two arches is the earliest example of such a construction. In fact a dome held up by two pairs of arches is to be found in the mosque of Diggaron, a building that dates from as early as the tenth to eleventh century and about which Voronina herself published the first paper.<sup>9</sup>

Taken together the architectural, constructional, and stylistic data allow us to reconstruct the history of the mausoleum of Muhammad Bosharo in the following way. In the thirteenth century, on the bank of a stream at the foot of a thickly wooded mountain, a domed mosque with a square plan was built, correctly oriented toward Mecca through its qibla (fig. 11). The entrance to the mosque was located opposite the mihrab on the northwest side and was most probably set in two small pylons of a rather modest portal, following which there was a broad, vaulted passageway of the same width as the niche located directly opposite and just in front of the mihrab. The two side niches of the same width stood on the lateral axis of the domed hall. The resulting square room, broadened by the four axial niches, represents the archetype of a layout widely used in the Middle East even before Islamic times. The corner spaces that were created in the construction were then used to lay out small chambers of the mortuary-hall (*chillia-khana*) variety. Here the pious worshipers would spend forty days reading prayers and in meditation on the Qur'an.

Later (and clearly after the completion of the struc-



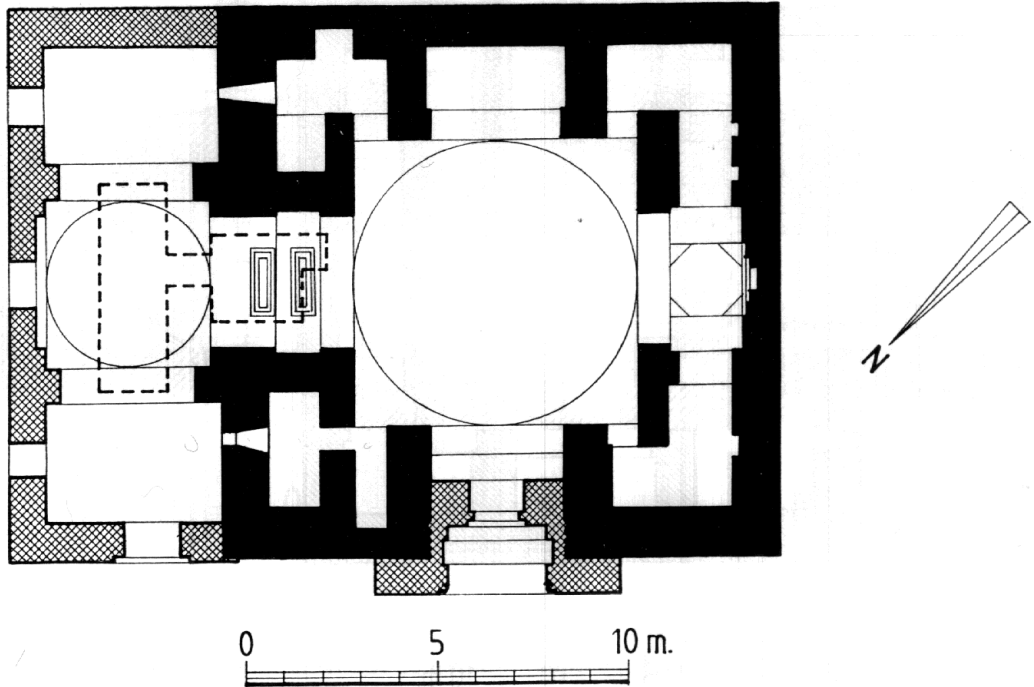


11. Reconstruction of the plan. The first stage of construction.

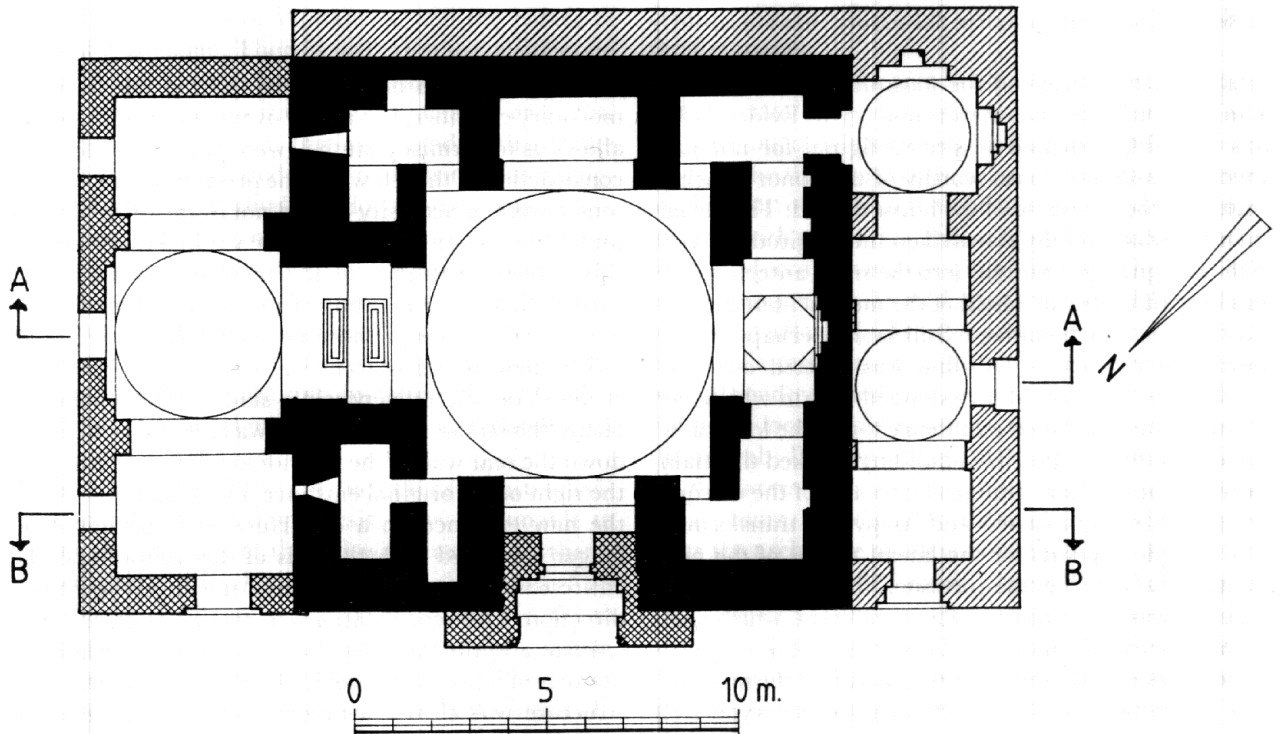
ture) directly in front of the mosque's entrance some man was buried in an underground crypt. Evidently he was a well-known and respected figure, for not just anyone would have been worthy of the honor of being buried on the threshold of the house of God. The burial chamber was carefully oriented on the longitudinal axis of the mosque; the entrance into the small antechamber was located at the threshold of the mosque, but did not impinge on that boundary. Still later, perhaps in the fourteenth century, a building was erected over the gravesite in the form of an extended hall in which the central dome continued and then capped the longitudinal axis of the mosque. This building blocked the main façade of the mosque; the entrance portal of the mosque was therefore demolished and its pylons transformed into the side supports for the lateral arches of the new addition that rose over the gravesite. The dome of the new structure was raised directly above the crypt, which happened to be exactly in the middle of the structure. Finally, in the middle of the vaulted passageway into the mosque, over the entrance to the antechamber of the crypt, two majolica-decorated tombs were set, definitively blocking off the former entrance (fig. 12).

The disposition of the tombs, placed not over the mortuary chamber, but rather over the entrance into it, allows us to surmise that they were put there before the construction of the left wing: the precious facings on the tombs were of necessity placed not in the open air, but under the shelter provided by the vaulted entryway. In this way the entrance to the mosque was effectively closed off, and the building of a sepulchral hall directly in front of the mosque became justifiable.

The new portal entrance to the mosque was constructed on the only possible side — the northwest, facing the stream. To do this it was necessary to break down the rear wall of the interior axial niche, located to the right of the original entrance; as a result, the axis of the new entrance, in a departure from tradition, no longer coincided with the axis of the mihrab and the entire edifice was reoriented to a northwest-southeast direction. This reorientation was reinforced by the subsequent addition, attached to the southwest, originally the rear side, of the mosque. The function of this new structure was clearly a funerary one, but here along with the lengthwise *gurkhana*, and on the same axis with it, the square *ziarathana* was envisaged from the outset.



12. Reconstruction of the plan. The second stage of construction.



13. Reconstructed plan of the third and final stage of construction.

With its dome and four axial niches, it reproduced in miniature the central hall of the mosque itself (fig. 13).

For some reason, the builders could not, or chose not to, keep the length of the new addition in line with the side of the square mosque (in the case of the first addition this condition is met) and extended its rear wall further, thereby disrupting the overall rectangular shape of the edifice. This extension was continued all along the rear wall of the mosque as far as the easternmost corner, and within the width of the added wall three narrow chambers were installed at various heights. Their function remains unclear; perhaps they were to be additional, extremely uncomfortable, *chillia-khana* rooms.

Both funerary additions to the mosque are of typological interest. The room in the form of an extended rectangular hall divided into three bays by transverse arches was a rather widespread phenomenon in Middle Eastern architecture of the Middle Ages. Such halls, the middle bay of which was roofed with a dome and the side bays with vaulted ceilings, were built both as separate edifices and as part of larger complexes. This type is represented several times in the necropolis of Shah-i Zinda in Samarqand (in the entrance to the compound and in the composition of the tomb of Qussam ibn 'Abbas)<sup>10</sup> and is included in the composition of the mausoleum of Sultan Uljaytu in Sultaniyya, the mosque of al-Juyushi in Cairo,<sup>11</sup> the mosque of Turbat-i Shaykh Jam in Iran,<sup>12</sup> and the addition to the ancient Cairene mosque of Sharif Tabataba,<sup>13</sup> and one of the oldest mosques in Central Asia, Talkhatan-baba, as well as in a multitude of modest buildings found throughout the lands of Central Asia, especially in Tadzhikistan.<sup>14</sup> All these buildings are in fact mosques, not mausoleums. The one exception is the addition made to Uljaytu's tomb. It was meant to become the sepulcher of the imams 'Ali and Husayn, whose ashes the Mongol khan intended to transfer there from Karbala.<sup>15</sup>

Uljaytu's tomb was completed in 1313, that is, clearly not long before the mosque in Mazar-i Sharif had these peculiar additions made to it. Would the choice of type (a type so unusual in local funerary structures) perhaps have been made under the influence of the famous Irano-Azerbaijani mausoleum?

West Berlin

(translated from the Russian)

## NOTES

1. L. C. Bretanitskii, "Ob odnom maloizvestnom pamiatnike tadhikskogo zodchestva" (Concerning a little-known monument of Tadzhik architecture), *Materialy i issledovaniia po arkhologii SSSR*, no. 66 (1958).
2. V. L. Voronina and K. S. Kriukov, "Mavzolei Mukhammeda Bosharo" (The mausoleum of Muhammad Bosharo), in *Sbornik "Drevnost' i srednevekove narodov Srednei Azii"* (Antiquity and the Middle Ages of the peoples of Central Asia) (Moscow, 1978). The general point of view developed in this article is to be found in my *Mavzolei Mukhammeda Bosharo* (Dushanbe, 1974).
3. The name is connected with the city of Balkh. The construction of these vaults was realized from the four corners, each of which was bridged by brick arches leaning toward the corner and with progressively wider diameters. Such arches were then continued until they met in the middle. This construction does not need the wooden scaffolding indispensable for regular vaults. See E. Diez, *Die Kunst des islamischen Volkes* (Berlin, 1917), p. 79, fig. 105.
4. A characteristic example is the mosque of Talhatan-baba (11th century), located in Turkmenistan. See G. A. Pugachenkova, *Puti razvitiia arkhitektury iuzhnogo Turkmenistana pory rabovladieniia i feodalizma* (Paths of architectural development of southern Turkmenistan in the time of slavery and feudalism) (Moscow, 1958), p. 250; *Arkhitekturnye pamiatniki Turkmenistana* (Architectural monuments of Turkmenistan) (Leningrad, 1974), p. 141.
5. Once the ancient mosque of Merv, built by the Arabs, had ceased to function as a mosque after a new and larger one had been constructed it was quickly filled up with graves.
6. The most significant center-domed mosques in Central Asia are Shir-Kabir (10th century, southern Turkmenistan), Diggaron (10th-11th centuries, Bukhara region), and the western building of the madrasa of Khoja Mashad (11th century, southern Tadzhikistan). See *Pamiatniki arkhitektury Turkmenistana*, pp. 64-66; 86-89; S. Khmel'nitskii (Chmel'nizkij), "Medrese Khodsha Mashad," in *Po sledam drevnikh kul'tur Tadzhikistana* (Tracing ancient cultures of Tadzhikistan) (Dushanbe, 1978), pp. 117 ff.
7. Of course, this was only done when a firm connection between the old and new parts of the building was essential for structural reasons.
8. Free-standing structures over burial sites (that is, buildings meant to be mausoleums) in the form of an open three-arched loggia similar to the Florentine loggias of the fourteenth and fifteenth centuries are totally unknown in the architecture of the Islamic world.
9. V. Voronina, "Nekotorye dannye o pamiatnikach zodchestva Uzbekistana" (Some data concerning the monuments of Uzbekistan architecture) in *Arkhitekturnoe nasledstvo* (Architectural heritage), no. 3 (Moscow, 1953), p. 118.
10. G. A. Pougatchenkova (Pugachenkova), *Chefs-d'oeuvre d'architecture de l'Asie centrale* (Paris, 1981), pp. 93-94.
11. John D. Hoag, *Islam* (Weltgeschichte der Architektur) (Stuttgart, 1986), p. 73.
12. Donald N. Wilber, *The Architecture of Islamic Iran: The Il Khanid Period* (New York, 1969), p. 52.
13. K. A. C. Creswell, *Muslim Architecture of Egypt* (Oxford, 1952), fig. XXXIV.

14. S. G. Khmel'nitskii (Chmel'nizkiij) and A. Mukhtarov, "Sred-nevekovoe zodchestvo Kabadiana" (Architecture of the Middle Ages in Kabadian) in *Po sledam drevnikh kul'tur Tadzhikistana* (Traces of ancient cultures of Tadzhikistan) (Dushanbe, 1978), pp. 79-84.
15. Several mausoleums and necropolis structures in Aswan, Egypt,

dating from the eleventh century are of this type. They are oriented along the cardinal points of the compass and in some of them there are niches of the mihrab type, but they are oriented due east and not toward Mecca, which here is to the southeast. See Ugo Monneret de Villard, *La necropoli musulmana di Aswan* (Cairo, 1930), fig. 5, 9, 36, 63, 80.