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Doris Behrens-Abouseif

Four Domes of the Late Mamluk Period [avec 4 planches].

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FOUR DOMES OF THE LATE MAMLUK PERIOD

Doris BEHRENS-ABOUSEIF

The typical Mamluk dome is a high structure set on a transitional zone above the square part of the building to achieve as much height as possible⁽¹⁾.

Late Mamluk domes were usually carried by pendentives or sometimes a hybrid device of squinch-pendentives as in the case of Ġānibāy al-Ašrafī near the mausoleum of Barsbāy (1432/33). However squinches were never abandoned by the architects of the late Mamluk period (mausoleums of Aytimiš al-Naġāšī 1383, Ibn Ḡurāb 1430, Taġribirdī 1440).

But even when squinches were used, they always appeared in combination with an accentuated external transitional zone which gives the Mamluk dome its typical appearance. Yet in the late XVth century, there appears a type of dome on squinches unlike previous models in Cairene architecture.

The most prominent examples are two domes built by Amīr Yašbak min Mahdī al-Dawādār during the reign of Qāytbāy. The history of these buildings has been dealt with in a separate study; the architectural peculiarities are the subject of our concern here.

I. — THE DOME OF YAŠBAK SOUTH OF MATARIYYA.

This dome is located opposite the modern-day Qubba palace. As it appears now, the building is almost unrecognizable as a Mamluk construction, due to later embellishments of the post-revolution style which has completely altered the dome's exterior shape. Furthermore the original structure had been

⁽¹⁾ 'Alī Ibrāhīm, Laylā, «The transitional zones of domes in Cairene architecture», *Kunst des Orients*, X 1/2, pp. 5-23, p. 10 f., fig. 27.

previously enlarged through the addition of a XIXth century construction and a minaret.

The domed square chamber is the only surviving module of what had once been a much more extensive residential complex.

Thanks to a photograph taken by Hasan 'Abd al-Wahhāb ⁽¹⁾ it is possible to have some idea of the original outline of the dome.

The plain dome was set on a square base reached today by two flights of steps on the north-eastern side, which lead to the main chamber. No decoration appears on the exterior of the building except for a row of stucco windows in the drum of the dome. The external transitional zone is in the form of two steps and is only partially visible behind crenellations. The entrance does not bear any decoration whatsoever, which can be explained by the fact that the domed structure was originally attached to another building, and did not have a separate entrance from the outside.

The main room is 2.5 m. above street level. During the Ottoman period, the lower storey was used as a *sahriğ*, but its original function is not clear ⁽²⁾. The domed chamber is 11 m. long and is paneled with a beautiful marble dado bearing a marble inlaid inscription in floriated *Kūfi* which gives the date of the dome 882/1477.

The dome is carried on four large squinches resting on trilobe arches. The octagonal zone starts within the square, rather than above it as is usually the case in Mamluk domes. At each corner, two window openings starting at floor level are included within each of the side niches of the trilobe arch which support the squinch. The hoods on top of the two side niches are scalloped. The painting which decorates the squinches is recent, as is the interior decoration of the dome. The original inscription in the drum has been preserved, which contains the text of *Sūra* 76 (5-9) very commonly found on *sabil*(s). The room has an entrance on the western side where the later addition was attached.

⁽¹⁾ 'Abd al-Wahhāb, Hasan, *Tārīḥ al-masā'īd al-atariyya*. Cairo 1946, pp. 258-60, pl. 192.

⁽²⁾ *Bulletin du Comité de conservation des monuments de l'art arabe*, Cairo 1896, p. 132 f.,

1897, pp. vii-ix; 'Abd al-Wahhāb, *op. cit.*, pp. 269-72; van Berchem, Max, *Corpus Inscriptionum Arabicarum*, Cairo vol. I, 1894-1903, I (3), pp. 514 ff., 749 ff.

II. — THE DOME OF YAŠBAK NORTH OF HUSAYNIYYA
KNOWN AS QUBBAT AL-FADĀWIYYA⁽¹⁾ (Index 5).

This dome was built two years after the one described above, and was also part of a large residential complex.

The Fadāwiyya dome was built on the same pattern of the previous one, but on a larger scale. The exterior is plain and has no decoration except for *ablaq* masonry and a shallow rectangular stalactite portal with inscription bands. On the southern side, the entrance is 6 m. above street level. A staircase has originally never existed there, since the building used to be reached by an elevated passage connected to another structure. The dome has no exterior transitional zone. The main room is square, with sides of 14.3 m., almost as large as the base supporting the dome of Barqūq in the desert.

The dome of the Fadāwiyya is built in brick, as is the former example, and the transitional zone is composed of four large squinches set within the square. Each squinch rests on a smaller trilobe arch including a semi-dome on top of two side niches (Pl. XI, A-B). In the Fadāwiyya dome, two ogival window openings are included within the squinch zone, filling part of the side niches (at the dome near Maṭariyya they entirely fill the niches). In the case of the Fadāwiyya dome the semi-domes of the squinches bear stalactite ornamentation. The stucco interior of the dome itself, as well as the stucco decoration of the squinches, both of which still bear traces of gold and colors, are very rich and display a great variety of floral and geometric patterns. This lavish stucco decoration is a surprise in a building of the Qāytbāy period, where usually it is stone which plays the dominant role in architectural decoration.

III. — THE DOME OF ZĀWIYAT AL-DAMIRDĀŠ⁽²⁾ (Pl. XII, A-B).

There is one more dome of the late Mamluk period very similar to the dome built by Yašbak, included today in a modern mosque called *al-Ǧāmi'* al-Muhammadī.

⁽¹⁾ Cf. Pl. IX, B *supra*.

H., IV p. 112 f.; Bannerth, Ernst, « Über den

⁽²⁾ Ša'rānī, *al-Tabaqāt al-kubrā*, Cairo 1954, II, p. 147 f.; Mubārak, 'Alī, *al-Hiṭāt al-ǧadida al-tawfiqiyya li Miṣr wa'l-qāhira*, Cairo 1306

Sufis in Kairo », *Wiener Zeitschrift für die Kunde des Morgenlandes*, 62 (1969), pp. 116-132.

This dome was built as a *zāwiya* for Šayḥ ‘Abd Allāh Šams al-Dīn al-Muḥammadī, who came from Tabriz during the reign of Qāytbāy and settled in his *zāwiya* located at a short distance east of the Fadāwiyya dome. When he died in 1522, he was buried in his *zāwiya*. The Damirdāsiyya is today one of the most important Sufi orders in Egypt related to the Ḥalwatiyya. This dome construction is not registered in the list of Cairene Islamic monuments⁽¹⁾.

The exterior shape of the Damirdāsiyya dome looks exactly like the dome of Yašbak south of Maṭariyya as seen in the photograph of ‘Abd al-Wahhāb, before it was modernized. The square part of the building is now surrounded by a modern mosque. The domed chamber has no original decoration nor inscription left. Its transitional zone follows the same pattern already described, with the difference that no upper arch exists here, but only a trilobe arch which forms the squinch. It seems here that we are dealing with a further development: the squinch being incorporated into the trilobe so that we have a trilobed squinch instead of a combination of a squinch supported by a trilobed arch.

Here also below each squinch there are two openings below the side niches. Those at the southern corner are blocked where the *maqṣūra* around the cenotaph of the buried Šaiḥ Damirdāš stands.

Squinches with a trilobed arch have been occasionally adopted during the Ottoman period, as in the *zāwiya* of ‘Alī al-Hawwāṣ (early XVIth century), the mosque of Sinān Paşa (1571) and the mosque of Abū ‘l-Dahab near al-Azhar (1774).

IV. — THE COMPOSITION OF THE SQUINCH WITH TRILOBE.

The pattern of a squinch resting on a trilobed arch was utilized long before the Mamluk period in Persian Saljuk architecture as well as in the Rūm Salḡuk architecture⁽²⁾. But the device used in Salḡuk architecture, for example, in the domes of the Great Mosque of Isfahan, is different from the squinches with which we are dealing. Salḡuk inspiration can be seen in the Fatimid and Bahri

⁽¹⁾ The dome of Damirdāš will be soon published in a separate study. *dans la Turquie Orientale*, Paris 1940, pl. XXX and XCVII.

⁽²⁾ Gabriel, Albert, *Voyages Archéologiques*

Mamluk squinches with multiplying alveoles where the center of the squinch on each tier is occupied by a hood flanked on both sides by multiplying niches and half-niches.

The trilobed pattern of the Fadāwiyya Dome has inspired Wiet to compare the treatment of these squinches to the treatment of Cairene portals of the same period ⁽¹⁾. His argument is that the Mamluk architect would treat the transitional zone of a dome as he would treat a semi-dome in a portal vault, since the structural problems are the same. Such a comparison between portal vaults and domes is not new, nor is it peculiar to Mamluk architecture. Creswell has drawn this same parallel with regards to the portal of Bayt al-Halifa at Samarrā with its semi-dome on squinches ⁽²⁾. He compared the treatment of the stone portals of Ayyubid Syria to that of contemporary stone domes. Herzfeld has drawn a similar parallel relative to *muqarnas* domes of Mesopotamian style ⁽³⁾, as in the case of *Māristān Nūr al-Dīn* in Damascus. Of course this parallel can not be followed ad infinitum and the sequence of Cairene domes is independent of that of Cairene portals, but one can speak of an occasional and also reciprocal transfer of patterns between both types of vaults because of similar structural problems. The trilobe pattern which is characteristic of late Mamluk as well as Ottoman Cairene portals evolved from the Bahri Mamluk stalactite vault with a semi-dome, in combination with a trilobed arch. This combination represents an evolutionary pattern which can be easily followed; the outlines of the stalactite vault crowned with a smaller semi-dome already suggests a trilobed shape, as can be seen, for example, at the back portal of the mausoleum of Sanğar (Pl. XIII, A).

Later the shape of the vault was adapted to the trilobed frame by carving out alveoles in the space between the vault and the frame. This resulted in a full trilobe shaped vault, as in the cases of Ğamālī Yūsuf (1357), Asanbuğā (1370) and Ilğāy al-Yūsufī (1373).

⁽¹⁾ Hauteceur, Louis et Wiet, Gaston, *Les mosquées du Caire*, Paris 1932, p. 317 f.

⁽²⁾ Creswell, K.A.C., *The Muslim architecture of Egypt*, Oxford 1959, II p. 147 f.

⁽³⁾ Herzfeld, Ernst, «*Damascus : Studies in architecture I*», *Ars Islamica* IX (1942), pp. 1-53, pp. 2-46,

A taste for clean structure and bare vaults developed during the reign of al-*Ašraf Barsbāy*, perhaps as a reaction to the lavish use of dripping stalactites in portals of al-*Mu'ayyad*'s reign. While Barsbāy's *madrasa* at Bayn al-Qasrayn has a

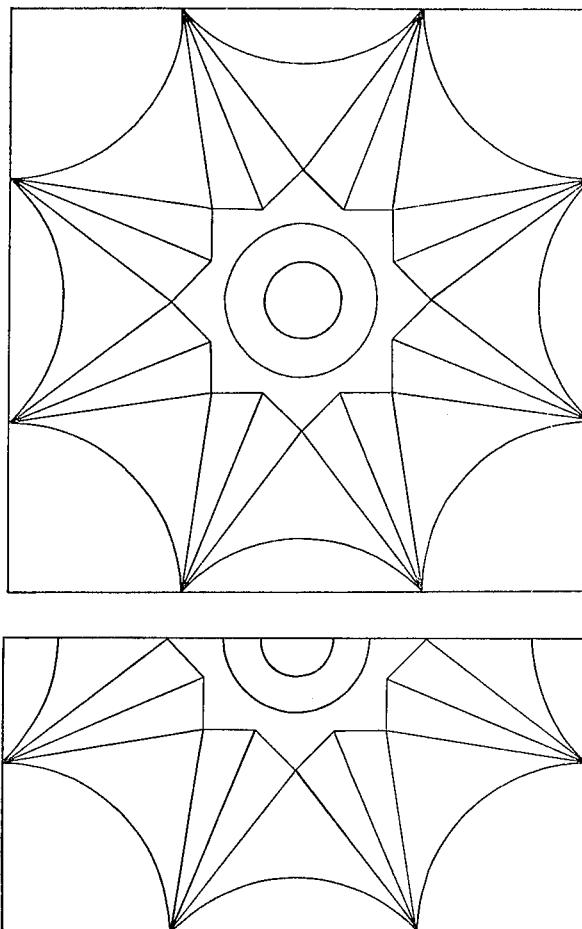


Fig. 1. — Cross-Vault of the portal.

large semi-dome with very few stalactites between the semi-dome and the pendentives, a new variation appears in Barsbāy's mausoleum in the desert and in the portals of Qādī Yahyā at Ḥabbāniyya and Būlāq (1453, 1448) (Pl. XIII, B and XIV, B). Here instead of pendentives the semi-domes of the portals rest on

squinches without the use of stalactites except within the semi-domes. The squinch arches intersect with a blind niche set between them in the manner of a cross-vault so as to form half an octagonal star. This became the favorite pattern for

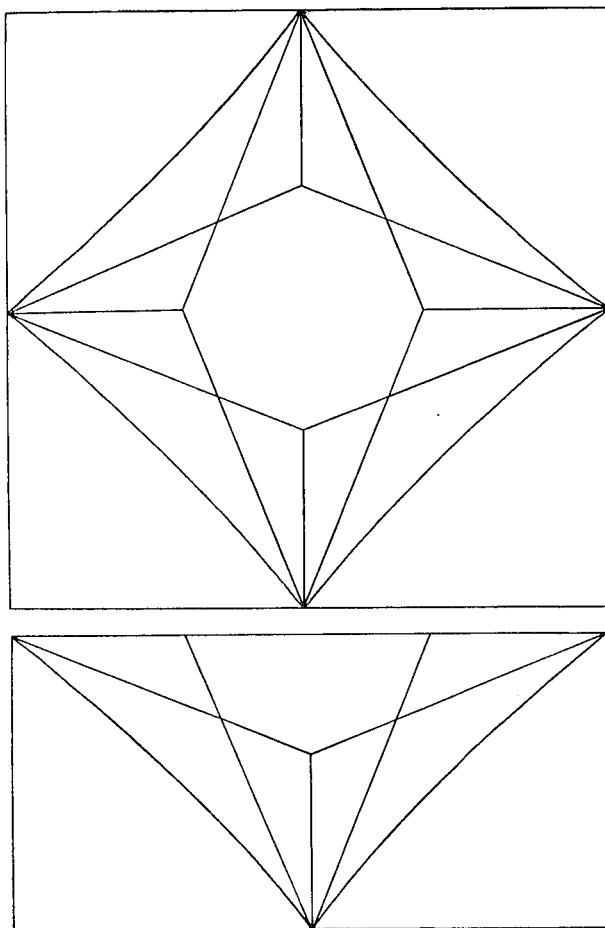


Fig. 2. — Cross-Vault of the squinch.

late Mamluk and Ottoman portals. It is also the pattern which inspired the treatment of the squinches described above. To transfer this portal device into a squinch, the central blind niche was suppressed and the result was a semi-dome over two instead of three arches, intersecting in a cross pattern (figs. 1-2).

The next variation on this theme occurred in a portal built later than the dome of Yašbak south of Maṭariyya : the portal of the mosque of Abū Bakr Ibn Muzhir (1479), Pl. XIV, A. Here the semi-dome of the portal rests on two intersecting squinches, without the central niche, forming a cross vault. Also, the arrangement of small ogival windows in the portal vault resembles very much that of the windows at the dome near Maṭariyya where the windows at the corners entirely fill the side niches. Here, obviously, the squinch design has, in its turn, inspired the portal design.

The parallel between the squinch with a trilobe arch and the portal of the late Mamluk period answers only part of the question concerning the origin of this squinch type. The structural part of our transitional zone, i.e. the absence of a transitional zone above the square, since the squinch springs within the square part of the construction, differs as already mentioned from the typical Mamluk treatment of domes.

There is a dome in Cairo carried on an octagonal base with squinches set below the summit of the walls : the dome of the mausoleum of Fāṭima Ḥātūn (1284). Here the squinch is filled with a decorative pendentive. Yet this model is quite different in style and technique and cannot be accepted as a possible prototype for the transitional zone of the domes mentioned above. On the other hand we can find in pre-Ottoman and early Ottoman architecture of Western Anatolia transitional zones of domes with squinches very similar to the ones with which we are dealing here. For instance, similarities can be found in the mosque of Orhān Ḥān at Gebze (mid XIVth century) or the mosque of Yildirim Bayazid at Mudurnu⁽¹⁾.

Before raising the question of whether a common prototype may have inspired both the Western Anatolian and the Mamluk styles of architecture, or rather, if some direct influence played a role in this similarity, we may come closer to the solution of this problem by dealing with the date when, for the first time, these Ottoman-style squinches were introduced into Cairene architecture. Therefore the dome of Ma'bad al-Rifā'i in the desert presents some interest.

⁽¹⁾ Kuran, Aptullah, *The mosque in early Ottoman architecture*, Chicago-London 1968, pp. 37, 40.

V. — THE DOME OF MA'BAD AL-RIFĀ'Ī IN THE EASTERN CEMETERY
 (Nr. 108) (Pl. XIV, C-D)

This dome is classified in the Index of Islamic Monuments of Cairo as being Ottoman, as it was by Hauteçœur and Wiet in their study of Cairene mosques⁽¹⁾. Except for some traces of late Ottoman decoration in the squinches, however, there is no justification for this dating. In an unpublished thesis⁽²⁾, this building was attributed to Yašbak min Mahdī because of a dating inscription in the drum of the dome which mentions the year 883 H. Yet the *waqf* deed of Barsbāy states clearly that this dome was built by him around 1432/33.

The dome of Ma'bad al-Rifā'ī is located in the desert opposite the mausoleum of Sultan Barsbāy built in 1432/33, and stands among other funerary and religious structures erected during the same period⁽³⁾.

The building is a square structure with a plain brick dome. The transitional zone is visible from the outside, but a XIXth century illustration shows the dome starting immediately above the square without a visible transition⁽⁴⁾.

The dome has a row of windows in the drum and no external decoration. The outer walls of the building show clearly that it has undergone more than one stage of construction. The upper parts of the lower windows have been walled up along with three of the four upper windows. The square chamber has sides 12.80 m. in length and its internal transitional zone looks exactly like that of the previous domes. But the arrangement of the windows in the corners is different; they do not reach as high as the squinch zone. The original arrangement of the windows, before they were partially walled up, would not have allowed the architect to include a trilobed arch within the squinch, since the summit of the windows is higher than that of the side niches in the trilobed arch. This, then, must have been a later addition; originally, the squinch must have appeared plain, like the squinches in the early Ottoman mosques mentioned above.

(1) Hauteçœur-Wiet, *op. cit.*, p. 348.

(2) 'Abd al-Halīm, Sāmī, *al-Amīr Yašbak min Mahdī wa a'māluhu al-mi'māriyya bi'l-qāhira*. Unpublished M.A. thesis, Univ. of Cairo 1970 (Nr. 828), p. 147.

(3) *Huğğat al-Asraf Barsbāy*, Nr. 880 Awqāf, dated 1030/1620, p. 30.

(4) Lane-Poole, Stanley, *The story of Cairo*, London 1906, p. 239.

Nothing of the original decoration of the Rifā'i dome has been preserved. Two inscription bands, one in the dado and the other in the drum, have for the greatest part disappeared. Only a few fragments are still legible in the drum : « *Muhammad rasūlu'llāh* »; « *Sīdī al-Rifā'i waliyyu'llāh* »; and traces of the sultanic title « *al-ṣahīd al-sā'id* ». Also, traces of a date can still be recognized as Ramaḍān 883/1478. The dome of Ma'bad al-Rifā'i is mentioned in the *waqf* deed of Sultan al-Āṣraf Barsbāy as part of his funerary and religious complex which he built on both sides of the road in the desert. The *qubba* is defined as a *zāwiya* dedicated to the *fuqarā'* of the Rifā'i order.

According to the *waqf* description, the dome must be dated to the reign of Barsbāy, about 1433. Thus the dating inscription of 883 and the decoration of the squinches with a trilobed arch must be results of later additions when the consolidation work was done at the dome, one year after the dome of Yašbak near Maṭariyya was built, and one year earlier than the dome also built by Yašbak to the north of Ḥusayniyya. The inscription band was apparently renewed, mentioning the date of restoration and most probably including the name of the former Sultan Barsbāy, hence the title « *al-ṣahīd al-sā'id* ». This means that the introduction of Anatolian style squinches into Cairene architecture must have taken place at least as early as the first half of the fifteenth century.

According to Kuran, the early Ottoman architects of western Anatolia applied this system of squinches as an experiment while in search of a safe and secure type of transitional zone for a large dome. These experiments were not completely successful and the squinches were soon abandoned in Ottoman architecture in favor of another style of transitional zone.

For the Mamluk architect, the situation was quite different. He was accustomed to building high as well as large domes in the media of both brick and stone. He did not have to search for an especially safe type of zone of transition for a large dome.

We can never discount the possibility that it was simply a taste for innovation which accounted for the adoption of this different pattern into Mamluk dome architecture.

But it is very interesting to note that none of the four domes mentioned was built as a mausoleum.

— The dome of Yašbak near Maṭariyya was part of a complex which included residential as well as religious structures. Ibn Iyās mentions Sufi meetings (*mī‘ād*) as well as singing and dancing which were probably Sufi rituals ⁽¹⁾.

— The dome of Yašbak north of Ḥusayniyya, the Fadāwiyya, was never a mausoleum, contrary to Creswell's appellation of the building. Its founder Yašbak built himself a mausoleum in the desert; the building at Ḥusayniyya does not include any funerary structure. This dome was also part of a residential complex. Later travelers, Čelebī and Pococke, saw a great number of cells attached to it ⁽²⁾.

— The dome of al-Rifā‘ī is specified in the foundation deed as a *zāwiya* built for the Rifā‘ī order.

— The dome of Damirdāš was a *zāwiya*, and cells still exist in the walls of the square part around the dome. The sources state that the founder was buried in his *zāwiya*. The location of the cenotaph at the corner of the chamber indicates that the room was not meant originally as a mausoleum.

— Qāytbāy is reported to have built a dome in the village of Marq al-Zayyāt north-east of Cairo called *Qubbat Muṣṭafā*, after the name of a man who dwelt there and after him his wife ⁽³⁾. This is obviously a *zāwiya* as well.

Of course the use of a dome was never restricted to funerary or religious constructions alone, but the difference in style between the four domes described and the funerary domes of the period may have some meaning, in particular if we consider that all the examples mentioned seem to be connected to Sufi life. The dome is a type of roofing; alternatives in medieval Cairene architecture would be the *iwān*, the hypostyle room, or the *qā‘a*. The dome was chosen perhaps for its adequacy to cover an independent large square space. The adoption of a style of dome different from contemporary models used in royal funerary architecture should be considered as the expression of certain definite requirements which differ from the requirement of a royal mausoleum.

⁽¹⁾ Ibn Iyās, *Badā‘i‘ al-zuhūr fi waqā‘i‘ al-duhūr*, 2nd. ed., Muṣṭafā, Muḥ., Wiesbaden-Cairo 1963, III p. 182.

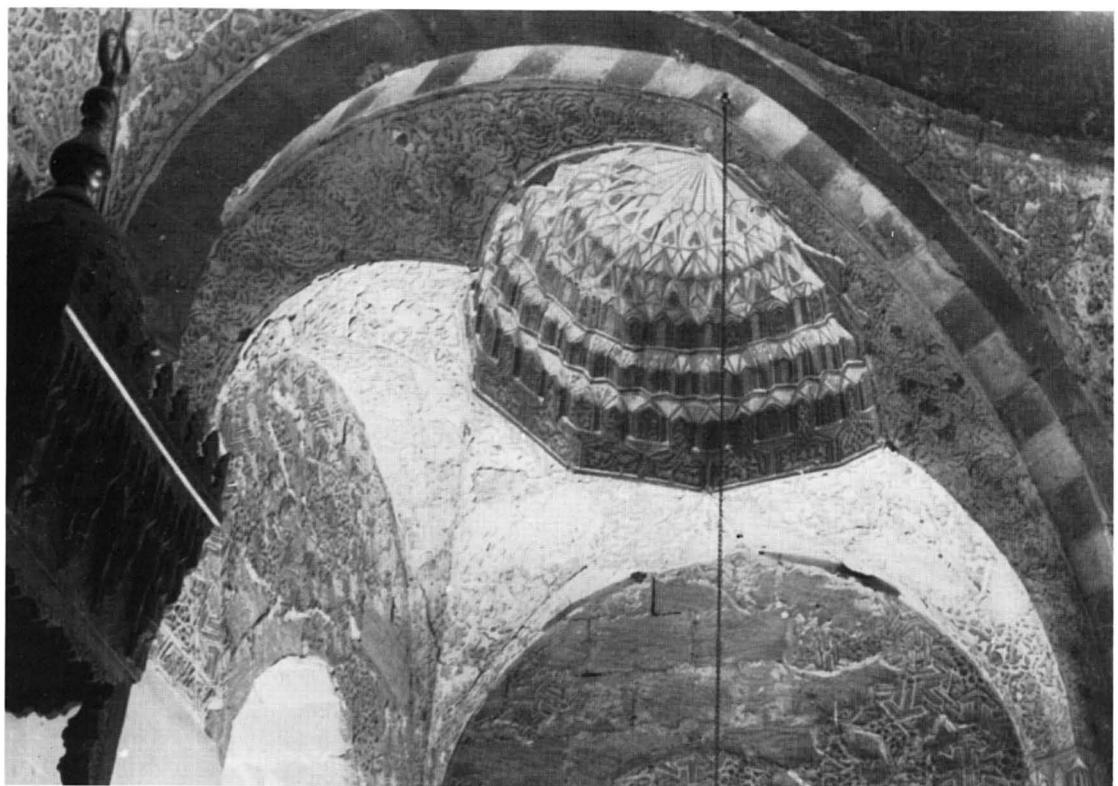
⁽²⁾ Čelebī, Ewliyā, *Siyāhatnamesi*. Vol. X « Misir, Sudan, Habeş » (1672-80), Istanbul,

1938, pp. 253, 480; Pococke, *A Description of the East and some other Countries*, London, 1743, I, p. 31.

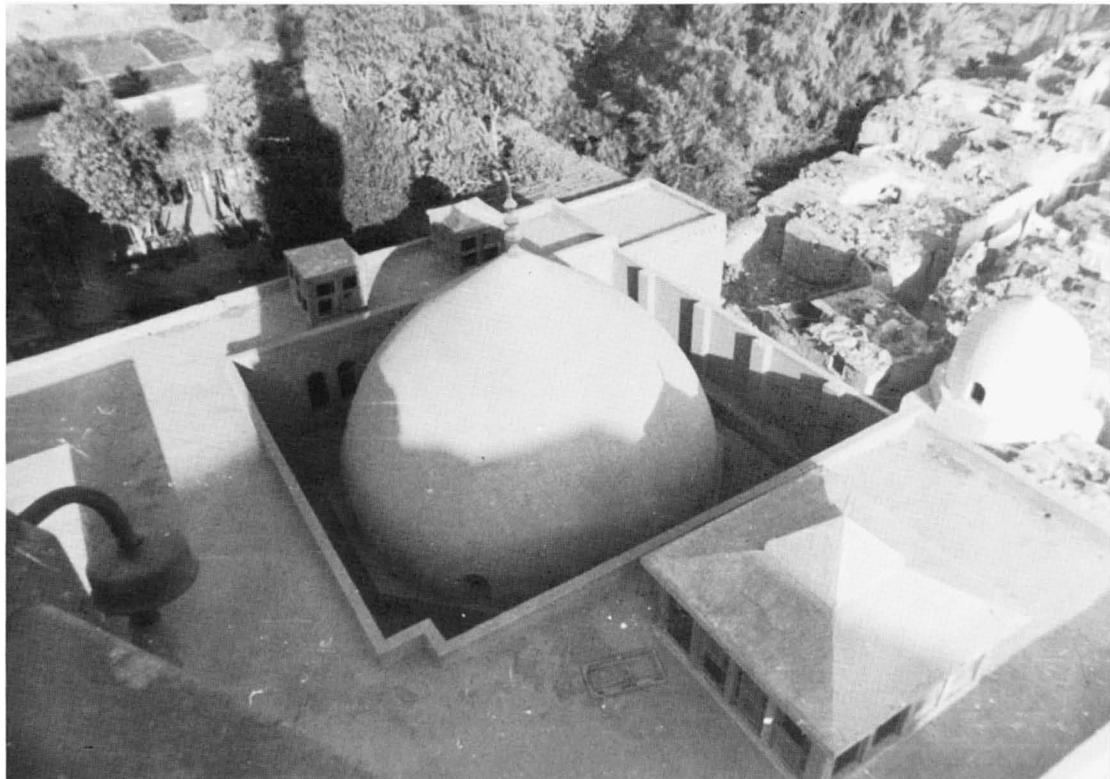
⁽³⁾ Muṣṭarak V, p. 74.



A. — Interior of Fadāwiyya dome.



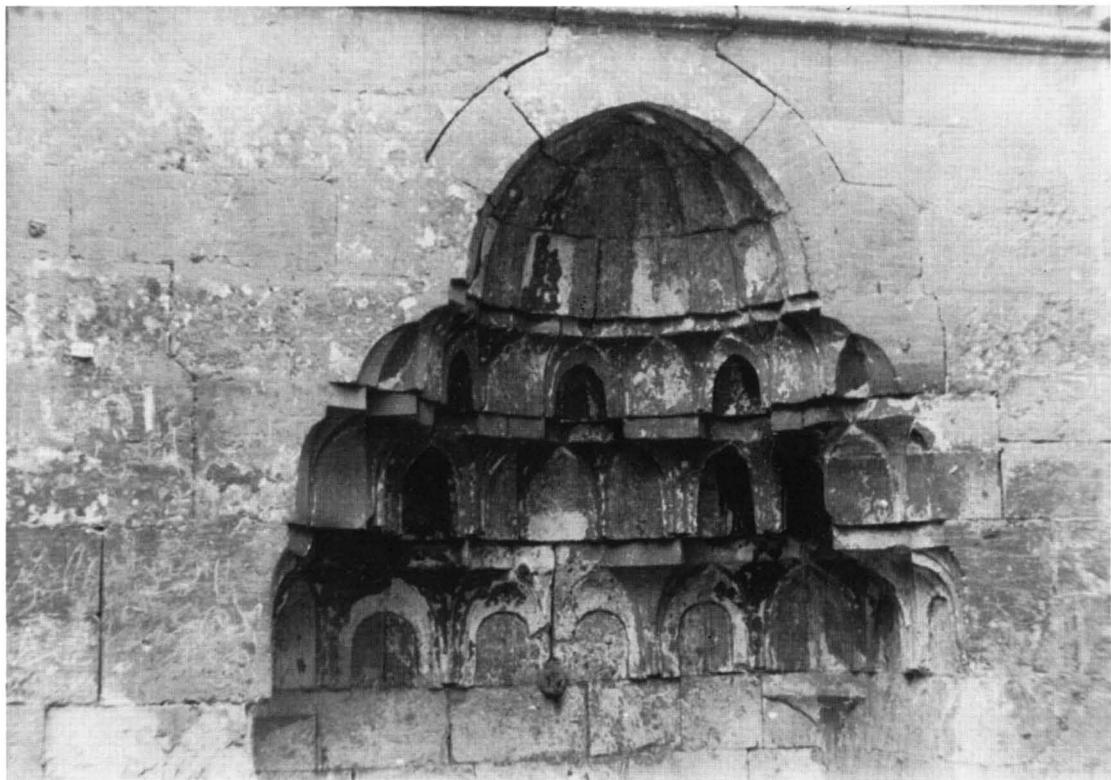
B. — Squinch of the Fadāwiyya dome (photo. by O'Kane).



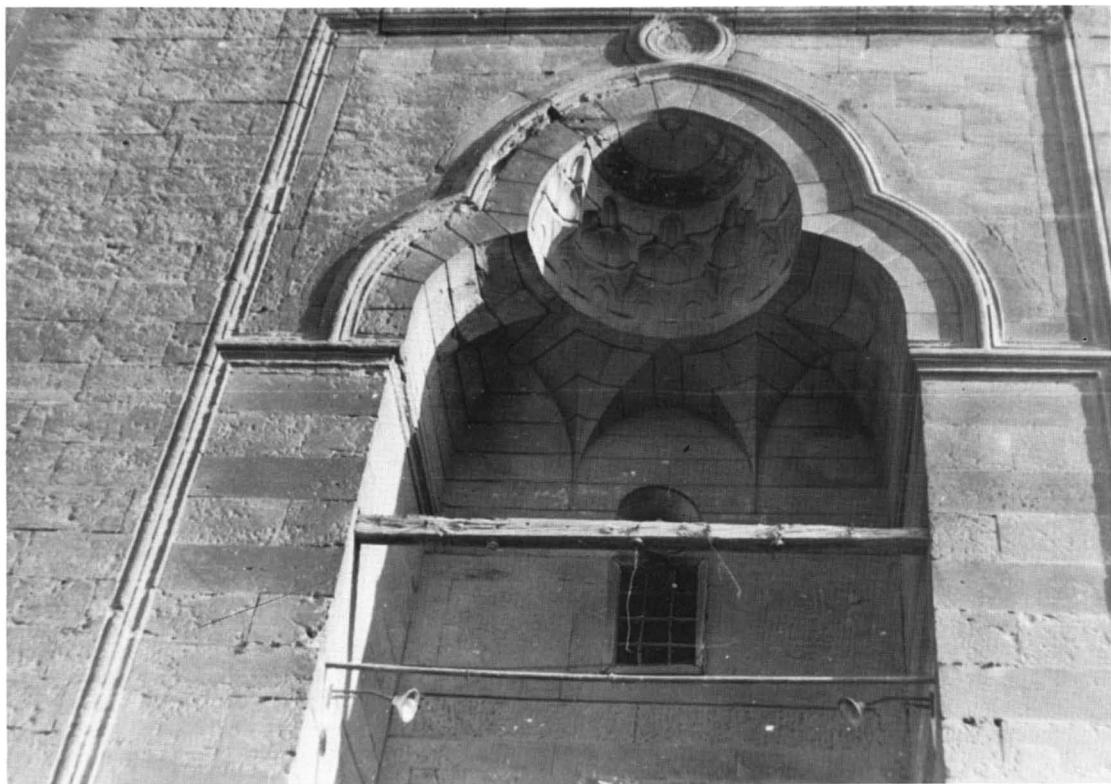
A. — Dome of Zāwiyat al-Damirdāš.



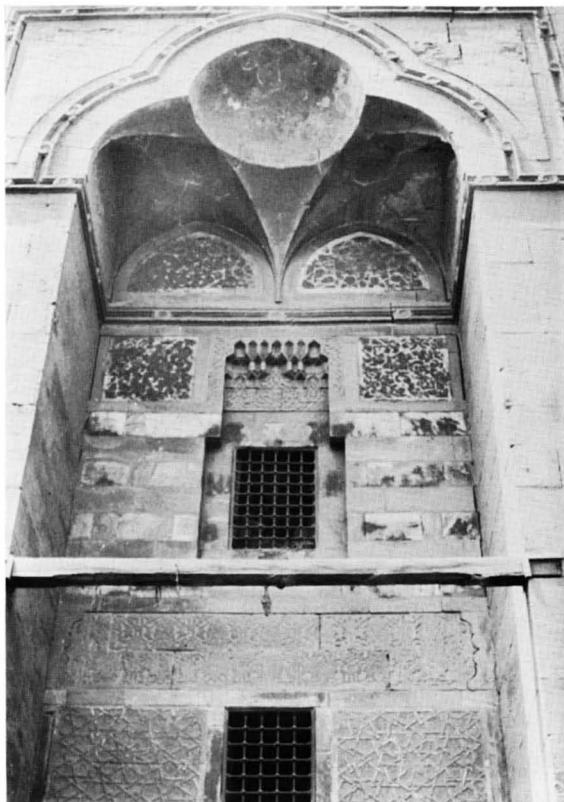
B. — Squinch of Zāwiyat al-Damirdāš.



A. — Early Mamluk stalactite portal, Sanqar al-Ğawlī.



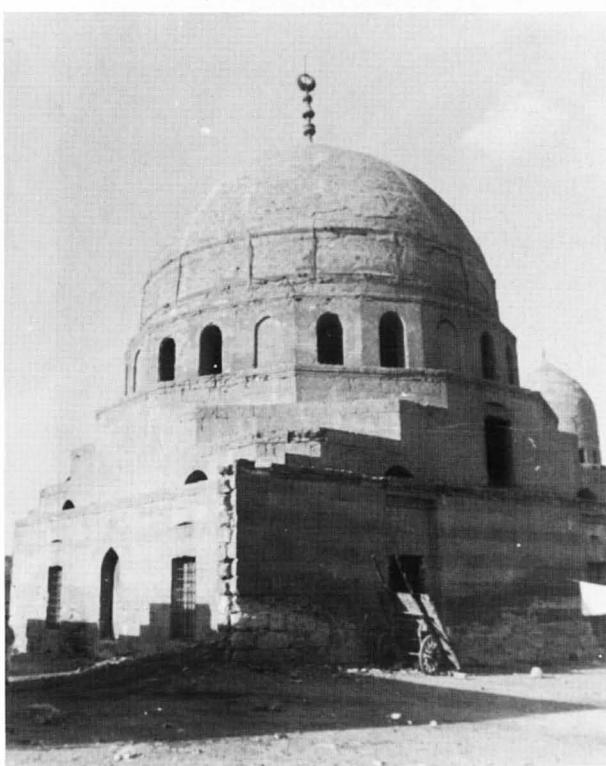
B. — Trilobe portal of the Ašraf Barsbāy at the desert cemetery.



A. — The portal of the mosque of Abū Bakr Ibn Muzhir.



B. — Portal of Qādī Yahyā at Ḥabbāniyya.



C-D. — Dome of Ma'bad al-Rifā'i.

