

HANS BUCHWALD / STUTTGART  
LASCARID ARCHITECTURE

With ten plates

After the Latin conquest of Constantinople in 1204 the Lascarid dynasty in Asia Minor, with its center initially in Nicaea, soon gained the political and military lead among the several Byzantine states which were formed on the territory of the former Byzantine empire. With only brief intervals it retained that lead throughout the period of the Latin control of Constantinople, and expanded its territorial possessions until eventually a number of Aegean islands and large parts of what is now northern Greece and Turkish Thrace were under its control. In 1261 Michael Paleologus, who had usurped the Lascarid throne only two years earlier and had become the *de facto*, if not the rightful heir to their empire, ended the Latin occupation of the capital, and initiated the revival and final high point of the Byzantine empire which is associated with the name of the dynasty he founded<sup>1</sup>.

The artistic and cultural achievements of the Paleologue period are relatively well known, even though the qualities of Paleologue architecture, with its unusually rich repertoire of forms, have recently unjustifiably been down graded<sup>2</sup>. If, as is so often the case, the political developments of the period are reflected in the arts, then the impetus of forms developed or conserved in Lascarid Asia Minor should be visible in the early monuments of Paleologue Constantinople. On the other hand, practically nothing was known until now concerning the architecture built under the Lascarids, and to my knowledge an attempt to determine its characteristics does not as yet exist. In recent surveys of Byzantine architecture the Lascarid period is hardly mentioned, a clear reflection of how little is known about it<sup>3</sup>.

---

<sup>1</sup> A. GARDNER, *The Lascarids of Nicaea*. London 1912; G. OSTROGORSKY, *Geschichte des byzantinischen Staates*. Munich 31963, 346ff.; A. VASILIEV, *History of the Byzantine Empire*. 2nd Engl. ed. Madison, Wisconsin 1965, 506ff., all with extensive references, among many others.

<sup>2</sup> R. KRAUTHEIMER, *Early Christian and Byzantine Architecture*. 2nd ed. extensively revised. Harmondsworth 1975, 439f., still maintains the position of the 1st ed. which was critically examined by H. HALLENSLEBEN, *BZ* 66 (1973) 128f.

<sup>3</sup> For instance R. KRAUTHEIMER 439ff.; C. MANGO, *Architettura Bizantina*. Venice 1974, 254; also V. KORAC, *L'architecture byzantine au XIII<sup>e</sup> siecle*, in: *L'art byzantin du XIII<sup>e</sup> siecle*. Belgrade 1967, 15; S. DUFRENNE, *Architecture et décor monumental d'art byzantin à l'époque de l'empire latin de Constantinople*. *Byz. Forschungen* 4 (1972) 64ff.

This lacuna is all the more frustrating because the written sources indicate that western Asia Minor enjoyed unusual prosperity at the time, probably creating a climate in which new building programs can be expected<sup>4</sup>. The Lascarids themselves are reputed to have been responsible for many buildings, although very few references to specific examples are known at present<sup>5</sup>. Regardless of the specific testimony of the written sources, however, it is certainly not unreasonable to assume that there was a Lascarid building program, considering the atmosphere of intense competition between the 13th century Byzantine states not only in terms of military and political power, but also in terms of gaining international recognition of their imperial authority and legitimacy<sup>6</sup>. With an effective building program the Lascarids could demonstrate not only their wealth and power, but also their ties to the Byzantine imperial heritage of cultural leadership and building patronage. The lack of buildings adequate for imperial ceremony and imperial taste in most cities of western Asia Minor, which had been in a state of provincial poverty and deterioration for several centuries may also have given added impetus to a Lascarid building program<sup>7</sup>.

The purpose of this investigation is to suggest how the lacuna in our knowledge of Lascarid architecture may, at least partially, be filled. The evidence available at present is insufficient to gain full insight into the dominant characteristics and the development of Lascarid architecture, and may, indeed, never be adequate because of the loss of most of the relevant monuments. I believe that there is, nevertheless, enough evidence available now to attempt to produce a tentative and incomplete picture of Lascarid architecture which is, however, as accurate and as complete as the picture we now possess of many other equivalent periods and provinces in Byzantine architecture, and which is more complete than our picture of most periods in the architectural development of Byzantine Asia Minor.

### 1. THE MONUMENTS

To my knowledge only three monuments built in Lascarid Asia Minor can specifically be identified with the aid of available written sources. Two are

<sup>4</sup> Particularly GARDNER 263ff.; VASILIEV 546ff.; C. FOSS, *Byzantine and Turkish Sardinia*. Cambridge, Mass. and London 1976, 76ff., each with further references.

<sup>5</sup> Particularly VASILIEV 546; A. HEISENBERG, *Kaiser Johannes Batatzes der Barmherzige*. *BZ* 14 (1905) 160ff.; also p. 263 below.

<sup>6</sup> This is a continuing theme throughout the accounts of the history of the period and particularly in OSTROGORSKY, *ibid. passim*, and VASILIEV 514ff.; also J. IRMSCHER, *Nikāa als „Mittelpunkt des griechischen Patriotismus“*. *Byz. Forsch.* 4 (1972) 114ff.

<sup>7</sup> The decline of the great cities of late Antiquity in Asia Minor is well illustrated by the excavations in Sardinia, summarised in FOSS, *passim*.

the famous imperial monastic foundations on Mount Sipylus, now Manisa Dağ near Magnesia or Manisa, probably both known under the single name Sosandra. The first, probably dedicated to Christ the Saviour, was founded by John Vatatzes, probably after his victory at Poimananon in 1224, while the second, which was probably dedicated to the Mother of God, was founded by his wife the Empress Eirene not much later<sup>8</sup>. Both John Vatatzes and Theodore II Laskaris were buried in the former church<sup>9</sup>. Unfortunately neither remains of the buildings nor the exact location of either monastery have yet been found, although they still may be found somewhere, hidden in the crags and forests of the huge massif<sup>10</sup>.

The third church which can be attributed to the Lascarid period on the testimony of the written sources is St. Tryphon in Nicaea (İzник), reconstructed by Theodore II Laskaris (1254—1258)<sup>11</sup>. This church has been associated with the remains of a church built on an inscribed cross plan which were uncovered in the town<sup>12</sup>. However, the remains are too fragmentary to permit a reliable attribution of the building to the 13th century, because the characteristics evident in the ruins indicate that the building could also have been constructed much earlier<sup>13</sup>. The church of St. Tryphon can therefore not be associated with the exposed church remains with any degree of certainty.

Because of the lack of known buildings which can safely be attributed to the Lascarid period on the basis of the written sources, the character of Lascarid architecture can at present be determined only with the aid of information concerning the history of the period, with the aid of stylistic evidence, and with the aid of evidence provided by the use of specific building technologies.

### *The Palace at Nymphaeum*

The extensive ruins of a palace at Nymphaeum (Nif, Kemalpaşa) in the Hermus valley between İzmir and Turgutlu, which were first identified and

<sup>8</sup> HEISENBERG 166ff., with references to the relevant sources, earlier literature, and an extensive analysis of the texts; A. FRONTRIER, *Notes sur la géographie ancienne de l'Ionie*, IV. Sossandra-Monoekos. *Revue des études anciennes* 1 (1899) 273ff.

<sup>9</sup> HEISENBERG, *ibid.*; GARDNER 232.

<sup>10</sup> Particularly HEISENBERG, *ibid.* for a discussion of the location, with a critical discussion of previous attempts to locate the monastery; in an extensive search in the area suggested by Heisenberg I was unable to discover any trace of ruins, but I was not able to cover all of the area with sufficient thoroughness.

<sup>11</sup> I. PAPADOPOULOS, 'Ο ἐν Νικαίᾳ τῆς Βιθυνίας ναὸς τοῦ ἁγίου Τρύφωνος. *EEBS* 22 (1952) 110ff. with the relevant sources.

<sup>12</sup> S. EYICE, *Izник'de bir bizans kilisesi*. *Belleter* 13 (1949) 37ff.

<sup>13</sup> *Idem* 43ff. points out that stylistically the building could be attributed to the period between the late 11th and early 13th centuries. The few characteristics of the building which can be recognized could also be even earlier.

photographed in the 1870's by E. Freshfield and more recently examined in valuable publications by S. Eyice and T. K. Kirova have generally been accepted as a construction of the Lascarid period<sup>14</sup>. Nymphaeum is mentioned already in the early years of Lascarid rule and is known to have been a favorite residence of John Vatatzes (1222—1254), who died there<sup>15</sup>. There is no reason to doubt the identification of the ruin with the Lascarid residence, and there is no reason to believe that a palace would have been built there earlier. There is also no reason to doubt, on the basis of available stylistic or structural evidence, that the building could have been built in the 13th century. On the other hand, the available sources do not permit the identification of the extant remains with a specific building program<sup>16</sup>.

The building is a simple elongated rectangle about 11.5 × 25.75 m in plan, its long sides facing approximately east and west, with a view along the open valley (Figs. 1—3)<sup>17</sup>. It does not seem to have been attached to other buildings or building parts, for its well preserved lower walls have well finished exterior surfaces on all sides and particularly at the corners. Its interior was divided into a ground floor and three upper floors. The ground floor seems to have had doors at the centers of its eastern and western sides. It is almost completely filled with fallen rubble and the form of its vaulting can therefore only be ascertained with the aid of excavation; its heavy construction, tiny windows, and apparent lack of wall pilasters could mean that it was covered by a barrel vault<sup>18</sup>. The first floor was divided into three

<sup>14</sup> E. FRESHFIELD, *The Palace of the Greek Emperors of Nicaea at Nymphio. Archaeologia* 49 (1886) 382ff.; S. EYICE, *Izmir yakınında Kemalpaşa (Nif) da Laskaris'ler Sarayı. Belleten* 25 (1961) 1ff.; *idem*, *Le palais byzantin de Nymphaion pres d'Izmir*, in: *Akten des XXI. internationalen Byzantinistenkongresses. Munich 1960*, 150ff.; T. K. KIROVA, *Un palazzo ed una casa di età tardo-bizantina in Asia Minore. Felix Ravenna* 103—104 (1972) 276ff., all with the relevant sources and extensive photographs.

<sup>15</sup> Particularly C. FOSS, *Late Byzantine Fortifications in Lydia*, below, p. 310; also FRESHFIELD 385; EYICE, *Le palais*, 150; IDEM, *Izmir* 2f.; KIROVA 277f., 294f.

<sup>16</sup> FOSS, *ibid.*, fn. 45, points out that a mid-13th century source mentions a synod held in *John Vatatzes' palace at Nymphaeum*. While available stylistic evidence permits an attribution of the palace to Vatatzes (p. 285ff. below) the textual evidence here is not as firm as for the three buildings mentioned above, for it does not state specifically that the building was constructed during Vatatzes' reign. Because Vatatzes was alive when the text was written, the palace would have been *his* at the time of writing even if it had been built earlier. Strictly speaking, therefore, the text serves as a *terminus ante quem* (1250), assuming that the palace referred to is the one now standing.

<sup>17</sup> My observations on the building were made in 1972 and 1973, but I was unable to make a measured plan, and the dimensions given here are taken from EYICE, *Izmir*, 4.

<sup>18</sup> I do not believe that the heavy wall pilasters and columns shown in previously published plans can be demonstrated on the ground floor without excavation. The central bay of the ground floor was covered by a complex vaulting form the seat of which can be traced above the door in the eastern wall (Fig. 2 and KIROVA, Fig. 5).

roughly equal parts. The central part was clearly covered by a groined vault. The lowest bricks of the vault are extant at the north west pillar of the bay, set almost vertically, but their upper ends tipped slightly outward, a form which is not usual in pendentives or arches, in which the lowest bricks are usually almost horizontal (Fig. 24). The large arch on the inside of the eastern wall of the central bay, and the lack of a wall pilaster in the same location also demonstrate that the entire central bay was covered by a single vaulting solution (Fig. 2). The northern and southern parts of the first floor are each subdivided into two bays by wall pilasters between the two windows in their eastern and western walls. The scant remains of the vaults which they carried can best be interpreted as large barrel vaults which spanned east-west, which were intersected by smaller, lower vaults spanning north-south between the pilasters. The single arch which spans the entire south wall on the interior clearly demonstrates that these flanking bays were spanned east-west without interruption by an intermediate support (Kirova, Fig. 6).

A monumental stair case was located on the north side of the building, parallel with the north facade. Remnants of its complex vaulted supports are extant at different intermediate heights in the north western and north eastern corners of the palace, leaving no doubt about its original location and its general forms<sup>19</sup>. The use of heavy wall pilasters between the windows of the second floor and remnants of a groined vault or another similar vault form above the pilaster between the two southern windows of the west wall indicate that the second floor was also vaulted. However, the lack of height in the vaulting zone of the second floor demonstrates that the vaults were not as spacious as those over the first floor, and that they must have been supported by intermediate columns or pillars. The extant remains of a large opening in the center of the western facade imply that the central bay contained a unified spacial, and probably also vaulting solution at this level corresponding with that of the first floor (Fig. 1)<sup>20</sup>. The lack of pilasters at the third floor level probably implies that these walls did not carry vaults, and that the roof was

<sup>19</sup> EYICE 5, Fig. 13; KIROVA 284, Fig. 6, with whom I cannot fully agree, because the evidence is incomplete, making a reconstruction with closed walls on both sides of the staircase questionable. Also, I do not believe that the form of the staircase can be explained by the supposed defensive character of the palace. The location of the sloping barrel vault of the staircase well above the vaulting level of the first floor at the north western pillar may indicate that the staircase consisted of two parallel flights between the first floor and the second, one above the other, making a comfortable riser: tread relationship possible in spite of the excessive floor height.

<sup>20</sup> The single remaining vault remnant clearly spanned east-west, but the seat of an additional vault which may have spanned north-south is also visible. A mixed construction of arches and timber may also have been used in some places. Accurate measurements of all

constructed of timber. The straight horizontal upper edge of the extant masonry, which is clearly visible in Freshfield's photographs and can still be traced in some places indicates that the building was never higher than its highest extant parts.

Many of the original features of the exterior are still visible and relatively little has been lost since Freshfield's photographs were made. All four facades are characterized above all by their pure geometric simplicity, each side being formed of a single flat plane broken neither by cornices nor by arcaded articulation, but only by the unusually regular fenestration and by the alternation of ashlar masonry and brick (Fig. 1)<sup>21</sup>. The over all impression is one of extreme elegance.

The ground floor zone seems to have been pierced only by a single door in the center of each long side, and by tiny slit-like windows. On the east the first floor is articulated by six windows which seem to have been equal in size and equidistant from each other. On the west there are also six windows on this floor, but while the two northern and two southern windows appear to be of the same size as, and exactly opposite those of the east facade, the two central windows are larger and closer together, and apparently formed a bifora with a column or narrow pier between them (Fig. 1, 3). Two windows which were apparently somewhat larger than the standard windows of the east and west facades articulated the south facade, but the fenestration of the north facade has not been preserved. In those parts of the second floor which have been preserved the fenestration was almost the same as in the first floor, except that the windows seem to have been slightly lower. While the west facade is relatively well preserved, not enough of the central opening remains to distinguish its specific forms, and the south facade is almost entirely destroyed at this level. Only small portions of the east facade are still extant, but they are sufficient to recognize windows roughly equal in size as, and on the axes of those of the first floor. Extensive remains of the third floor are extant only on the west facade, and here, too, the openings seem to correspond with those below them (Fig. 1)<sup>22</sup>. The complete lack of extant masonry at the third floor level of the east facade could be interpreted to mean that it was supported by a colonnade, although it can also be explained as an accident of preservation.

remaining vault fragments, possible only with the aid of scaffolding, is essential in determining the vaulting scheme and details. Excavation of the interior could also provide valuable information, not only for the ground floor, but also for the upper vaulting system, for large pieces of the vaults may still exist in the rubble, as they did in the excavation of Sardis church E (fn. 28 below).

<sup>21</sup> Particularly FRESHFIELD, Pl. p. 386, 388; EYICE, İzmir, Fig. 1—5; IDEM, Le palais, T. XXVI—XXIX; KIROVA, Fig. 1—3.

<sup>22</sup> FRESHFIELD, Pl. p. 388; EYICE, T. XXVII; KIROVA, Fig. 1.

The edges of the window openings do not seem to have had profiles, for no trace of profiles remains around the openings, even though the masonry near some of them is relatively well preserved. On the other hand, above the northern side of the first floor bifora in the west facade there is a short vertical section of a rounded profile, similar to an engaged half column set slightly into the surface of the facade. It is made entirely of cut bricks (Fig. 22). However, corresponding profiles exist neither in the relatively well preserved masonry on the other side of the bifora nor elsewhere in the facade. The profile does therefore not seem to have been an important articulating feature and its use may, perhaps, have been discontinued<sup>23</sup>.

Rather, the dominant decorative feature of the facades is the unusually pronounced striped effect created by the use of alternating layers of dark red brick and light grey ashlar (Fig. 1). Only the ground floor, up to the sills of the first floor windows, is entirely faced with well squared, perhaps reused ashlar blocks in regular horizontal courses. The masonry facing of all other parts of the facades consists of alternating layers of brick and ashlar which differs from earlier Byzantine examples built in a similar manner above all because of its strikingly bold visual impact<sup>24</sup>. This impact is achieved by the combined use of the following characteristic details: 1) a particularly strong color contrast between the brick and ashlar; 2) the regularity of the horizontal bands, which are continuous around all sides of the building except where they are interrupted by the fenestration; 3) the low height of the horizontal bands, which measure only about .50—.60 m in the first floor zone and diminish slightly toward the top of the building; 4) the uniformity in the heights of all the bands, both those of brick and those of ashlar. Four courses of brick are usually used in each brick band, and the ratio of the height of the individual bricks to the height of the horizontal mortar joints is close to 1 : 1. Occasionally vertically placed bricks are used between the ashlar blocks and with small additions they are sometimes transformed into characters similar to the letters of the Greek alphabet (Fig. 23)<sup>25</sup>. The vertical bricks are not used frequently enough to obtain the effect of "cloisonné" masonry, and characters similar to those of the Kufic script do not seem to have been used at Nymphaeum<sup>26</sup>.

<sup>23</sup> I was unable to find the frieze of vertical bricks mentioned by EYICE, İzmir 7, unless the occasional vertical bricks mentioned below are meant.

<sup>24</sup> Also p. 289f. below.

<sup>25</sup> EYICE 7, Fig. 14; IDEM, Le Palais, 153, T. XXIX—4.

<sup>26</sup> A. MEGAW, The Chronology of some Middle Byzantine Churches. *ABSA* 32 (1931—1932) 102ff.; also G. SOTIRIOU, 'Αραβικαὶ διακοσμήσεις εἰς τὰ βυζαντινὰ μνημεῖα τῆς Ἑλλάδος. *DChAE (Praktika)* III 2 (1933) 57 (also in *BNJ* 11, Heft 3—4 [1935] 233) and G. MILES, Classification of Islamic Elements in Byzantine Architectural Ornamentation in Greece, in:

The palace walls seem to have been constructed entirely of rubbed mortar faced on both sides with brick and ashlar. The interior facing frequently consists of single courses of brick which alternate with single courses of ashlar (Fig. 2). The vaults and arches seem to have been constructed entirely of brick similar in character to that used in the facades. Cavities in many parts of the masonry indicate that an extensive system of tie beams or timbers was used to strengthen the fabric of the building (Fig. 2). The timbers can be traced best, both parallel with and perpendicular to the exterior walls, at the level of the first floor, just above the vaulting of the ground floor. Clay pipes, some ending at the face of the facade, can also be traced in several places, particularly at the level of the first floor, suggesting that provisions for sanitary facilities of some sort existed in the building (Fig. 22, upper left)<sup>27</sup>.

#### *Sardis Church E*

In a recent investigation I demonstrated that the concurrence of historical, archeological, and stylistic evidence permits the attribution of church E at Sardis, a little over 50 km east of Nymphaeum, to the 13th century, and that the building was most probably built during the Lascarid period<sup>28</sup>. It is not necessary to repeat either the description or the arguments concerning the reconstruction and dating here, because they are given in considerable detail in the publication.

#### *Latmos Church 8*

In the same investigation I pointed out that some of the decorative facade details of the largest church on Kaiwe Asar Adası, an island off the south shore of Lake Latmos (Bafa Göl) between Ephesus and Milas, have close similarities with distinctive details in Sardis E, and that the two churches were therefore probably built during the same general period by builders working in a similar provincial idiom<sup>29</sup>. For the sake of convenience I will use the designation of the church given in Wiegand's final plan summary,

Actes du XII<sup>e</sup> Congrès International des Etudes Byzantines. Belgrade 1964, III, p. 281 ff., both with less emphasis on masonry ornamentation. Bricks cut into the shape of letters do not seem to have been used at Nymphaeum.

<sup>27</sup> Fn. 28, 274f., Fig. 4, 9 for a more detailed description of a similar system of tie beams and possible reasons for its use; the systems used in Nymphaeum and Sardis appear to be exactly comparable even in the specific locations of beams and details. KIROVA, *Un Palazzo*, 290 suggests that the clay drain pipes served to channel rain water into cisterns, a tempting hypothesis which must be discounted for those drains which opened directly onto the facade.

<sup>28</sup> H. BUCHWALD, *Sardis Church E* — a Preliminary Report. *JÖB* 26 (1977) 265 ff.

<sup>29</sup> IDEM 287, 289, Fig. 19, 20.

“Latmos church 8”, rather than the awkward term used until now, which is taken from his text<sup>30</sup>.

The church was built on the inscribed cross plan, with four columns or pillars supporting the major dome (Fig. 5)<sup>31</sup>. Unlike Sardis E the major apse is attached directly to the eastern cross arm without an intermediate bay, and the plan of the church was apparently not designed in accordance with the *quadratura*, but rather, with its sides in the proportion  $1 : \sqrt{2}$ <sup>32</sup>. The corner bays of the naos are covered by barrel vaults which span north-south, while the three bays of the narthex are covered by barrel vaults which span east-west (Fig. 13). The narthex, which had a gallery approached by an exterior stairway from the north, may have been a later addition, because its walls are not bonded with those of the naos (Fig. 10)<sup>33</sup>. The open archways between the bema and the flanking spaces are reminiscent of the similar solution in Sardis E, but they produce a sense of symmetry about the north-south axis of the naos which is not found in Sardis<sup>34</sup>.

On the exterior the major apse has seven sides while each flanking apse has three. Five sides of the major apse and all sides of the flanking apses are each articulated by a small high window framed by two concentric recessed

<sup>30</sup> T. WIEGAND, *Der Lätmos* (Milet 3/1). Berlin 1913, 42ff.; my observations were made in 1972. At that time portions of the lateral vaults and of the narthex walls shown in Wiegand's photographs had fallen, but the remaining fabric of the building was still preserved.

<sup>31</sup> There is no evidence to support WIEGAND's reconstruction of an eight-sided drum with squinches. The reconstruction in his Fig. 66 is also erroneous in that it fails to show the low, windowless clerestory walls portions of which are still extant flanking the eastern and western major arches.

<sup>32</sup> Fig. 4, 5; BUCHWALD 271 f.; the proportion  $1 : \sqrt{2}$  is obtained by dimensioning the long side of the church equivalent to the diagonal of a square with its sides equivalent to the length of the short side. If the eastern side of the square is set at the eastern face of the flanking walls, then the western side of the square also defines the western edge of the naos. The dimensions used to obtain the construction are taken from WIEGAND's plan Fig. 65, and were not controlled in the church itself. Although the construction does not fit the plan with complete accuracy, it fits closely enough to be convincing, considering possible inaccuracies in the measurement of the church, in the drafting and reproduction of WIEGAND's Fig. 65, and above all in the construction of medieval buildings. Inaccuracies of several centimeters are usually found in modern buildings, built with all of the aids of modern surveying equipment and contemporary building technology.

<sup>33</sup> WIEGAND 48, Fig. 68, who states clearly that the building was constructed in a single operation. Although some of the lowest ashlar blocks of the flanking facades project westward beyond the western face of the western naos wall, there is an obvious vertical joint between the flanking walls of the naos and the narthex, and the masonry is slightly different in character in the narthex facades. The narthex was therefore probably planned together with the church, but built slightly later than the naos.

<sup>34</sup> BUCHWALD 266f.; cf. also p. 281 below. In this respect Latmos 8 seems to be more traditional than most of the buildings in our group.

brick arches, and those of the major apse also by a brick dentil frieze (Fig. 11)<sup>35</sup>. The three central faces of the major apse and the center faces of the flanking apses are also each articulated by a tall lower window which is also framed by two concentric recessed brick arches. Above the arches of the higher windows in the major apse there is a brick double meander frieze, one meander above the other, similar to that used in one of the Sardis domes<sup>36</sup>. In contrast to the Sardis meander band, however, the vertical members of the upper meander in Latmos church 8 correspond with every second, rather than with every member of the lower meander, creating a more complex and stronger rhythm and an individualisation of each meander unit.

Both the northern and southern facades of the naos of Latmos church 8 are articulated by three blind arcades which reflect the three bays of the structural solution generally though not in detail (Fig. 10, 12)<sup>37</sup>. The arcades are recessed twice above the spring lines of their arches, but only once below, and are constructed of cut stone voussoires which usually alternate with two or more bricks. A small window framed by two concentric recessed brick arches is located in the flanking bays of the southern, but not of the northern facade. The central bay is well preserved only in the northern facade. It was pierced by a single large window in the lunette which rested on the arches of a broad opening which seems to have been a triple window<sup>38</sup>, which in turn apparently was located above a doorway in the center of the bay. While the triple window is framed by recessed brick arches and a dentil frieze, the lunette window is framed by recessed arches built of brick and occasional stone voussoires without a dentil. A single meander frieze decorates the lunette on both sides of the window. It is different from those used in Sardis E in that the horizontal bricks which close the meander on the top and bottom are not used in every consecutive meander unit, but only in every second unit, thereby breaking the continuity of the meander and forming individual units which, like those of the double meander on the Latmos apse, have a stronger sense of rhythm<sup>39</sup>. A chevron frieze like that found on the northern apse of Sardis E decorates the lunette above the western, but not the eastern section of meander (Fig. 12)<sup>40</sup>. Roundels composed of a round cavity enclosed by radial bricks are found at the top of the lunette on both sides of the window,

<sup>35</sup> Also BUCHWALD, Fig. 19; WIEGAND, Figs. 64, 65, 69.

<sup>36</sup> BUCHWALD 269, Figs. 11, 12, and p. 286ff., as well as p. 286 below.

<sup>37</sup> Also WIEGAND, Fig. 62.

<sup>38</sup> The solution suggested in IDEM, Fig. 66 seems less plausible and contains a number of errors and unlikely reconstructions.

<sup>39</sup> BUCHWALD, Fig. 20.

<sup>40</sup> IDEM 269, 293, Fig. 16.

and also near the tops of the lunettes of the flanking arcades in the south facade (Fig. 27)<sup>41</sup>. The upper part of the lunette of the western arcade in the north facade was decorated by a pattern of brick lozenges the centers of which are hollow, and were probably originally filled with mortar (Fig. 26). The pattern is poorly preserved and seems to have been repaired with small stones and masonry of brick and ashlar.

The three facades of the narthex do not seem to have been articulated by blind arcades comparable to those of the naos facades (Fig. 10)<sup>42</sup>. A small niche with a stepped plan and brick conch crowned by two concentric recessed brick arches flanked the major door in the western facade on both sides. There is also a small window with a brick arch in the northern part of the west facade, and an arched doorway in the southern facade of the narthex<sup>43</sup>.

Most areas of the facades which were not decorated with brick ornamentation were faced with alternating courses of brick and ashlar reminiscent of the Nymphaeum facades in general, but not in detail. While the courses are regular and continuous in some areas, for instance in the apse zone below the brick arcades and on the eastern side of the south facade, in other areas they are less regular and at times interrupted by oversized ashlar blocks (Fig. 10, 11, 27)<sup>44</sup>. The courses are generally less regular in the narthex facades, although the same general application of alternating brick and ashlar courses was used here as well. Vertical bricks between the ashlar blocks are used only rarely in the facades of the naos, but are somewhat more common in the narthex walls, where characters resembling those of the Greek alphabet, like those of Nymphaeum, were also used occasionally (Fig. 25).

Most of the brickwork in Latmos church 8, including that of the narthex and the decorative arcades is unusual in that the mortar joints between the bricks are filled with narrow, often broken bricks and brick chips with their outer faces just underneath the surface of the mortar (Fig. 26, 27). The mortar is still extant in some places, its outer face hardly recessed behind the outer faces of the visible bricks. This technique is the same as that used in the decorative brickwork, but not in the arches of Sardis church E<sup>45</sup>, and resembles the recessed brick technique common in Constantinople and other

<sup>41</sup> Also WIEGAND, Fig. 62, 66; p. 285 below.

<sup>42</sup> IDEM, Fig. 62, 63; nothing of the upper southern narthex wall remained in 1972, making it impossible to confirm or reject the reconstruction in WIEGAND's Fig. 66.

<sup>43</sup> Clearly visible in IDEM, Fig. 62, but incorrectly shown as a window in the reconstruction of Fig. 66; the crude opening in the northern narthex wall may, however, have originally been a small window.

<sup>44</sup> WIEGAND, Fig. 62—64.

<sup>45</sup> BUCHWALD 268f., Fig. 12, 13.

areas in the 11th and 12th centuries<sup>46</sup>. The ratio between the heights of the bricks and those of the mortar joints, however, is only about 1 : 1 at Latmos, much closer than is usual in recessed brickwork, and approximately the same as that obtained at Nymphaeum without the use of brick filled mortar joints. The purpose of the brick filled mortar joints at Latmos may therefore have been a reduction in the required amount of mortar, rather than an increase in the apparent height of the mortar joint.

The structural techniques used in Latmos church 8 resemble those of Sardis E and Nymphaeum. The church seems to have been built entirely of rubble mortar faced on both sides with ashlar and brick. In contrast to Sardis and Nymphaeum the interior facing and the vaulting consist almost entirely of ashlar and field stones, with brick used only intermittently, but this difference can probably be explained by the necessity, at Latmos, of transporting the brick across the water, from ancient Heracleia<sup>47</sup>. As at Sardis and Nymphaeum the masonry of Latmos church 8 was strengthened by an extensive system of timber tie beams which can be traced particularly well at the level of the springing of the lower arches and immediately above the lower arches, near the spring lines of the major barrel vaults (Fig. 13)<sup>48</sup>.

#### *Latmos Church 4*

The forms of two other Latmos churches can be related to those of Latmos church 8, and these two churches were probably also built during the same general period.

Latmos church 4, the Church of the Virgin on İkis Ada, an island off the northern shore of Lake Latmos is very poorly preserved and the forms of its plan, vaulting, south facade, and apse solution are conjectural (Fig. 6)<sup>49</sup>. Its north facade and narthex, however, are relatively well preserved. The north facade was articulated by three blind arcades, the western arcade somewhat

<sup>46</sup> Recessed brickwork as a criteria for dating 11th and 12th century buildings was first suggested by N. BRUNOV, *Die Odalar-Djami von Konstantinopel*. *BZ* 26 (1926) 360f.; H. SCHÄFER, *Architektur-historische Beziehungen zwischen Byzanz und der Kiever Rus im 10. und 11. Jahrhundert*. *Istanbul Mitteilungen* 23—24 (1973—1974) 197ff. provides a summary of the available material. — See also P. L. VOCOTOPOULOS p. 245ff. *Supra*.

<sup>47</sup> WIEGAND 43f. suggests that all the building material was brought from ancient Heracleia.

<sup>48</sup> BUCHWALD 270; the construction of Sardis E will be dealt with in greater detail in the Final Report which will be published in the *Archaeological Exploration of Sardis* series.

<sup>49</sup> WIEGAND 30ff., Fig. 45—50, who calls the church the "main church of İkis Ada". My term Latmos church 4 is taken from WIEGAND's final plan summary, titled "Beilage 6 zu Seite 96". The dedication of the church is given in an inscription on the lintel of the major portal (WIEGAND, p. 35ff.). It seems best to ignore most features of the reconstructed plan of the church in Fig. 47 until an excavation of the building provides more information about its interior organization.

larger, and the eastern somewhat smaller than the central arcade (Fig. 31). Small windows were located near the spring lines of the arches. Both the blind arcades and the window arcades are composed of two concentric recessed arches, the inner arch built entirely of brick, while the outer arch is built of stone voussoirs which alternate with brick. A brick dentil is used around the outer arches of the windows. Brick roundels similar to those of Latmos 8 are located near the tops of the extant lunettes and in the center of the spandrel between the two extant arches. Small symmetrically ordered plaques also decorate the western lunette on both sides of the roundel. Below the spring line the pilasters of the blind arcades are recessed only once, and pilasters also occur between the windows. Here the masonry facing consists entirely of horizontal ashlar courses which alternate with one or two courses of brick. The ashlar blocks, and also the stone voussoirs are much more regular in size and more carefully cut than those of Latmos church 8, and the use of bricks in the vertical joints of the ashlar courses seems to have been more common.

As in Latmos 8, the narthex of Latmos church 4 was a later addition<sup>50</sup>. The narthex was divided into three bays which were vaulted by groined vaults, and like Latmos 8, it had a gallery. While the original western facade of the church seems to have been articulated by blind arcades like those of the north facade<sup>51</sup>, the narthex facades seem not to have had arcaded articulation, again permitting a comparison with the narthex of Latmos 8. The Latmos 4 narthex facades were articulated only by windows on the north, south, and on both sides of the major portal. The arches of the portal and of the windows seem all to have been constructed in the same way as those of the naos north facade. The masonry facing seems also to have had the same character as that of the naos north facade, except that brick is hardly used below the spring lines of the window arches. These similarities indicate that the narthex was probably not built very much later than the naos.

The marble lintel over the narthex portal is carved with an arcade with alternating crosses and palmettes underneath the arches<sup>52</sup>. An inscription on the lower fascia, which names the *Panaghia Pantanassa* as patron of the church, and the monk *Methodius* as its builder, has tentatively been dated to the 13th century on the basis of paleographic evidence<sup>53</sup>. The lintel was

<sup>50</sup> IDEM, 33f.; the vertical joint between the naos and narthex observed in the text and just visible in Fig. 50 is ignored in the elevation of Fig. 46 and incorrectly shown in the plan of the same Fig.

<sup>51</sup> IDEM, Fig. 46, plan and section looking east.

<sup>52</sup> IDEM, 35, Fig. 48—49.

<sup>53</sup> IDEM, 38ff., attributes the inscription to the second half of the 13th century, an attribution which complies with the dates suggested by the stylistic development of the architecture and history of the area (p. 291 below).

probably originally part of an epistyle of an altar screen, and seems to have been a reused spoil, for the arcade at its northern end seems originally to have continued beyond the edge of the lintel<sup>54</sup>. The inscription could have been applied at the time the epistyle was reconditioned for its present use, although it could also be older<sup>55</sup>.

A system of wooden tie beams was used in the masonry of Latmos church 4, as in all of the other building described above<sup>56</sup>.

#### *Church Fragment at Eğri Dere*

A fragment of the western facade is all that is known at present of a church ruin at Eğri Dere, several kilometers north west of ancient Heracleia on Lake Latmos (Fig. 14)<sup>57</sup>. The facade was articulated by blind arcades built with two concentric recessed brick arches. Inside the arches of the arcades a door and window are also constructed with two concentric recessed brick arches. Below the spring lines of the arches, all of which spring from the same level, the pilasters of the blind arcade are recessed only once. Here, and in the lunette between the door and the blind arcade, the masonry facing is constructed of well cut ashlar blocks in regular horizontal courses, with a single brick course usually between the ashlar courses, and vertically placed bricks in most of the vertical joints. A brick roundel decorates the spandrel between the arches of the blind arcade. The brickwork in the arches is constructed using brick filled mortar joints similar to recessed brickwork, as described in Latmos church 8. Similarities such as these, as well as the general similarity in articulation permit the attribution of this facade fragment to the same general period as Latmos churches 4 and 8<sup>58</sup>.

#### *The Church of the Panaghia at Krina, Chios*

Several churches on Chios are also similar to the churches described above. The most important, and perhaps most similar is the very impressive, and very attractive church dedicated to the Virgin at Krina, between Vavyloi

<sup>54</sup> IDEM, Fig. 48; similar lintels have been found in a number of excavations in western Asia Minor, for instance at Sardis, Aphrodisias, and Xanthos and are well known in southern Greece in examples datable to the 11th and 12th centuries.

<sup>55</sup> Theoretically the inscription could have been applied to the lintel at any time. But if the inscription is, indeed, to be dated to the 13th century, then the narthex can hardly be much later than the inscription for historical reasons which are given below (p. 291 f.).

<sup>56</sup> WIEGAND, 33.

<sup>57</sup> IDEM 60, Fig. 82.

<sup>58</sup> IDEM 29, Fig. 35, 38 shows a chapel at Jediler, on Lake Latmos east of Heracleia (Latmos church 20) which also has some of the general features of the other churches. However, the lack of brick ornamentation, the lack of stone voussoires which alternate with bricks, and the lack of arches recessed twice probably indicate that the chapel should be attributed to a somewhat earlier date.

and Sklavia (Fig. 7, 18—21)<sup>59</sup>. Its plan is not similar to that of Sardis E or the Latmos churches, but is rather essentially the same as that of Nea Moni on Chios, with the naos covered by a single large dome on pendentives which are interrupted by exedral niches at the corners, producing an approximately octagonal plan in the vaulting zone. The exterior dimensions of the plan, without the apse, are about 8.25 × 16.70 m, somewhat smaller than Sardis E, and almost exactly 1 : 2<sup>60</sup>.

The major and flanking apses have three sides on the exterior, and are articulated by blind arcades recessed once or twice which are organized in two stories. Three windows of equal height divided by columns or pillars are located in the central apse, while each flanking apse had a single window. A meander frieze composed of two interlocking strands decorates the central apse above the blind arcades. The lunettes of the upper arcade are decorated by bricks set at an angle, producing an inverted "V" pattern reminiscent of the herringbone brickwork used in the same location in Sardis church E<sup>61</sup>.

The flanking facades are also articulated by blind arcades recessed once or twice. While some of the arches generally reflect aspects of the interior organization of the church, others, for instance those of the narthex and bema zones, have no relationship to interior features. The organization of the central zone is similar to that of the corresponding facade area of Nea Moni, the similarity being underscored by the exedral forms of the upper flanking arcades (Fig. 20)<sup>62</sup>. Each of the single and binate windows which fenestrate the flanking facades is enclosed in an additional recessed blind arcade. A meander like that used in the apse decorates the central lunettes below the spring lines. The centers of these lunettes are decorated by large quatrefoils with recessed centers which are flanked by a chevron on both sides. Other lunettes contain lozenge and basketwork patterns and brick courses set at an angle in a "V" pattern. Individualized units of a meander are also used at the tops of the central lunettes, and a pattern of scales, as well as simple "T"s are used occasionally in the spandrels between the arches. Single and binate miniature blind arcades occur in numerous places in the spandrel zones. A stone cornice with a simple raking profile marks the spring lines of the major arches. Two parallel friezes of hollow clay quatrefoils are located above the three upper arches of the central portions of the flanking facades, and under the roof line of the narthex (Fig. 28).

<sup>59</sup> C. BOURAS, Chios. Athens 1974, 30ff.; A. C. ORLANDOS, *Monuments Byzantins de Chios*. Athens 1930, II, Pl. 31—36. My own photographs and observations were made in 1960.

<sup>60</sup> The dimensions are taken from ORLANDOS, *ibid.* Pl. 32. The comments regarding the accuracy of dimensions in En. 32 above are relevant here as well.

<sup>61</sup> BUCHWALD, Sardis 268f., 289f.

<sup>62</sup> Compare BOURAS, Fig. p. 56; ORLANDOS, Pl. 12, 31, 34.



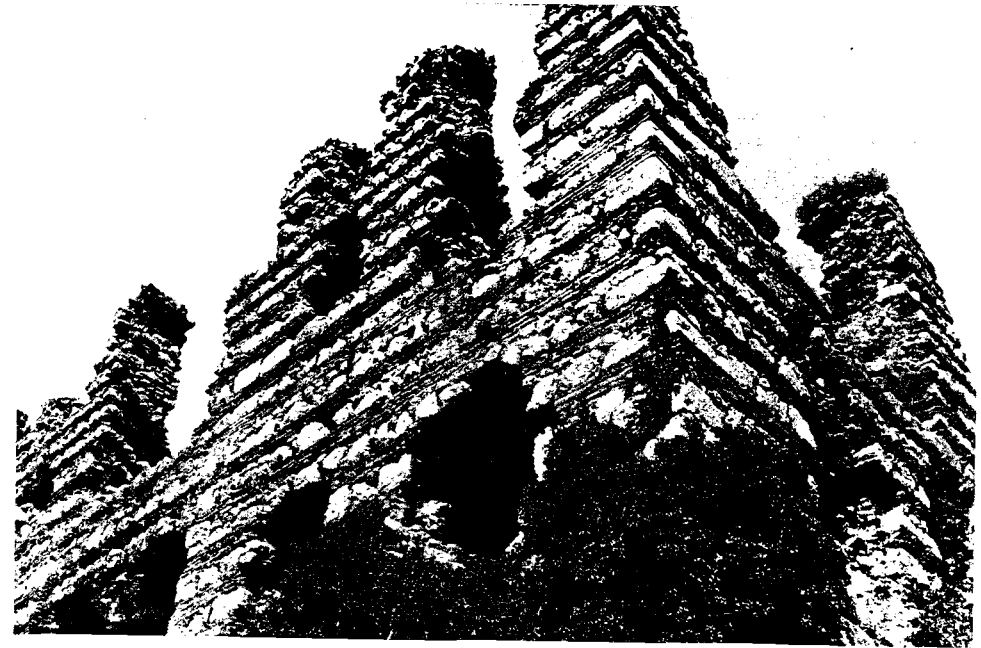
The major dome, which is only partially preserved, the facade ornamentation, all of the facade arches, and most of the surrounding masonry facing are built entirely of brick, while the lower areas of the facades are faced with well cut ashlar blocks in regular horizontal courses which alternate with several courses of brick at regular intervals. The ratio between the heights of the ashlar courses and those of the brick bands is usually close to 1 : 1, the same as in the palace at Nymphaeum. Only in the walls of the narthex are the ashlar courses less regular, and roughly hewn field stone is used here occasionally in place of the well squared ashlar blocks. All of the brickwork in horizontal courses appears to be constructed in the recessed brick technique, with mortar joints which are sometimes two, but more often three and four times as high as the adjacent, relatively narrow, bricks. One or two bricks are occasionally set vertically into the joint between two ashlar blocks, and in some places there are additional brick members, giving them the form of characters of the Greek alphabet (Fig. 18).

*The Church of the Panaghia at Sikelia, Chios*

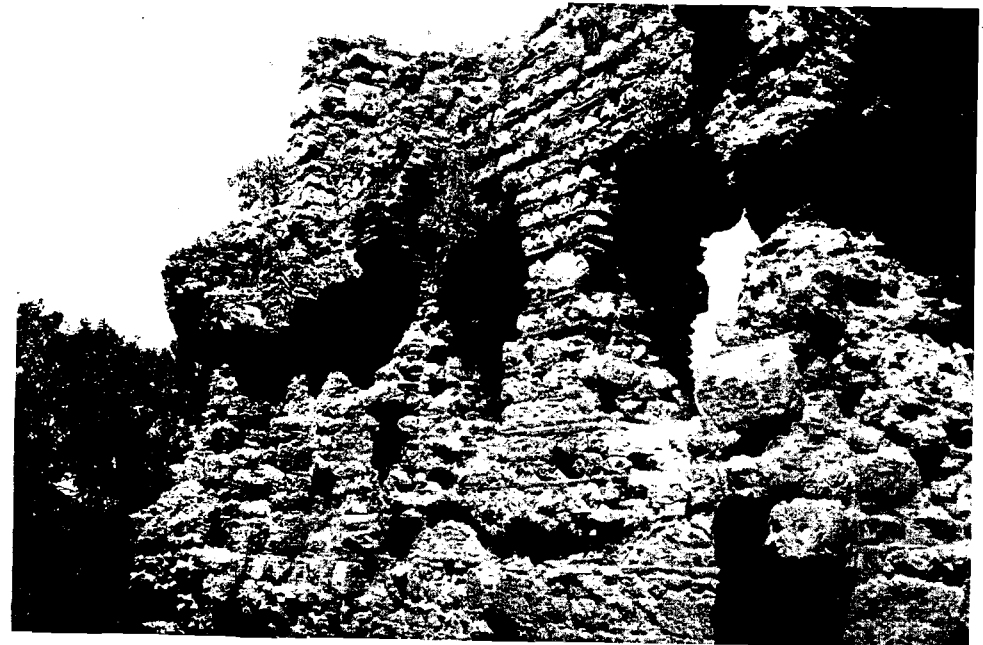
The church of the Virgin at Sikelia, between Tholopotami and Kalamoti on Chios is smaller and less monumental than Krina, but equally well preserved and also related to the churches of our group (Fig. 8, 15—16)<sup>63</sup>. The plan and vaulting scheme are similar to those of Sardis E in that elements of the inscribed cross church type are combined with those of a basilical solution, even though specific features are abbreviated at Sikelia and not similar in detail. At Sikelia the major dome is supported on pendentives which are carried by four arches equal in span and height. However, while the arches on the major axis of the church continue as the barrel vaults over the bema and the single nave, the lateral arches end as blind arcades, a motif which is repeated in reduced form as wall niches in the flanking walls of the bema and the nave. The exterior dimensions of the plan, excluding the apse, are about 5.50 × 13.30 m, an indication that the building was probably designed with its sides proportioned as the ratio between the side of a square (5.50 × 5.50 m) and the side of the same square plus its diagonal<sup>64</sup>.

<sup>63</sup> IDEM Pl. 43—48; BOURAS 34ff.

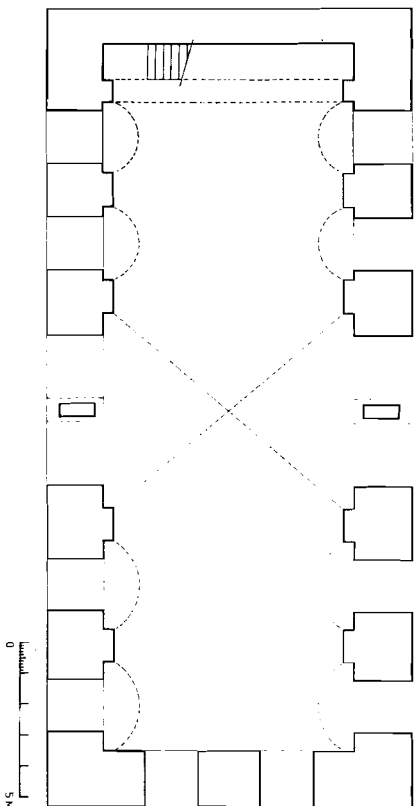
<sup>64</sup> The dimensions are taken from Orlandos, Pl. 44; while the comments regarding the accuracy of the dimensions in Fn. 32 above are also relevant here, the construction fits the plan so well that there can be little doubt about its use. Other proportional dimensions of the church include the height of the nave measured to the top of the vault, which is twice the width of the nave measured to the inside faces of the wall pilasters, and the height of the nave measured to the spring line of the vault, which is equal to the width of the nave measured to the rear faces of the wall niches.



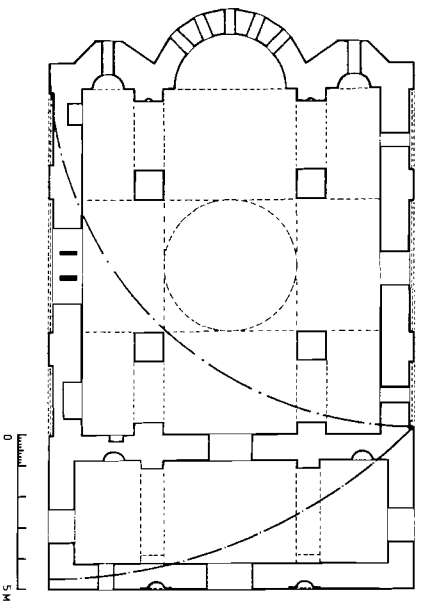
1. The Palace of Nymphaeum from the South West (1972)



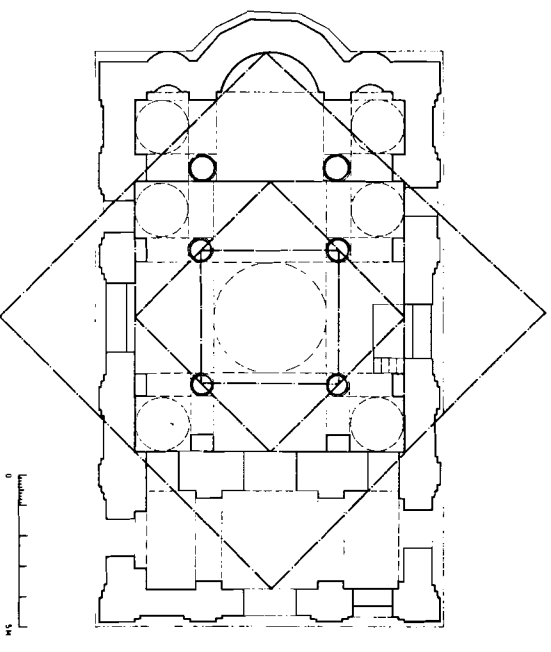
2. The Palace of Nymphaeum, Interior looking North East (1972)



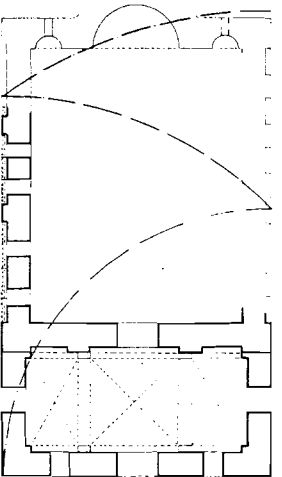
3. The Palace at Nymphaeum, First Floor Restored Plan



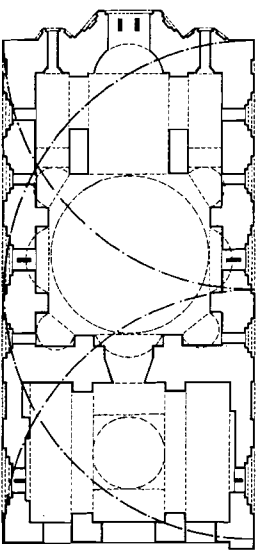
5. Larnos Church 8 (Kaive Asar Adasi) Plan with  $\sqrt{2}$  Construction



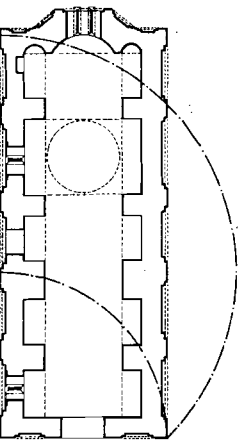
4. Church E at Sardis, Restored Plan with Quadratura Construction



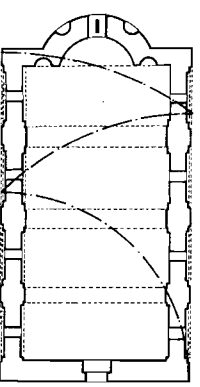
6. Larnos Church 4 (Ikis Ada) Plan with  $\sqrt{3}$  Construction



7. The Church of the Virgin at Krina, Plan with 1 : 2 Construction



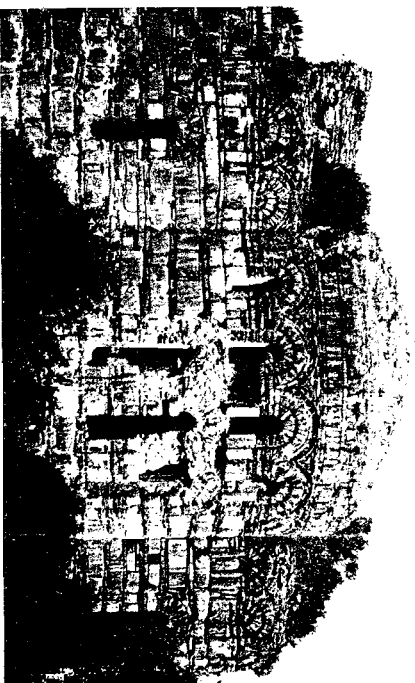
8. The Church of the Virgin at Sikeia, Plan with 1 +  $\sqrt{2}$  Construction



9. The Church of St. John at Chalkios, Plan with  $\sqrt{3}$  Construction



10. Latnos Church 8 (Kaiwe Asar Adasi) from the South East (about 1906)



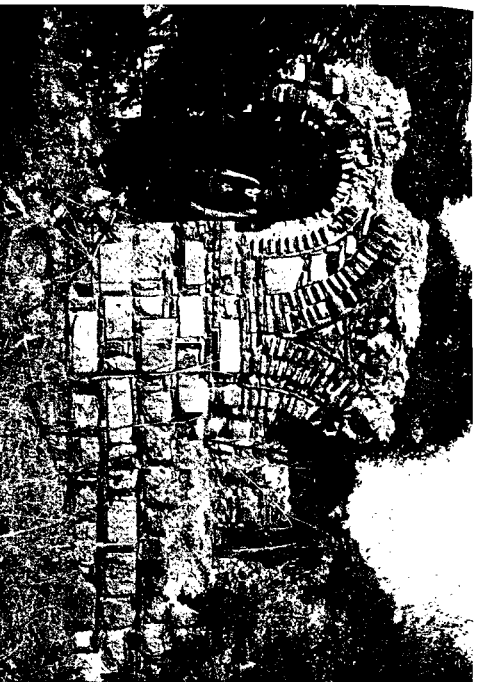
11. As 10 from the East (about 1906)



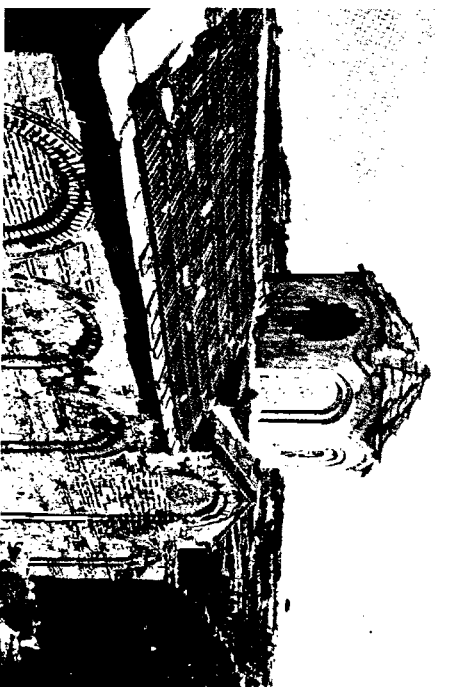
12. As 10, the Major Arch of the North Facade (1972)



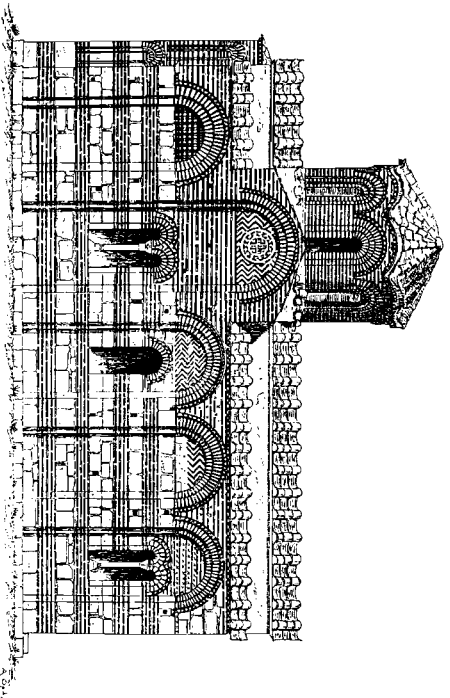
13. As 10, Interior looking North East (1972)



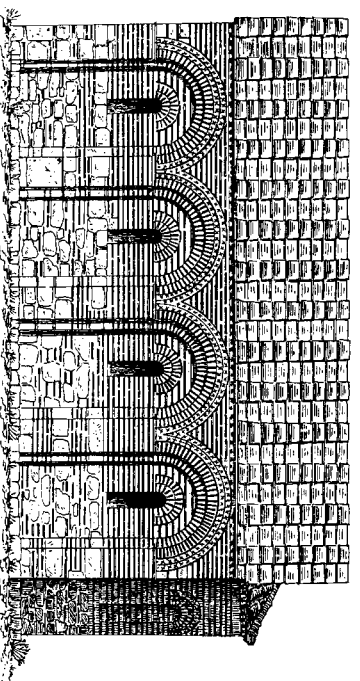
14. Church Ruin at Egri Dere, West Facade (about 1906)



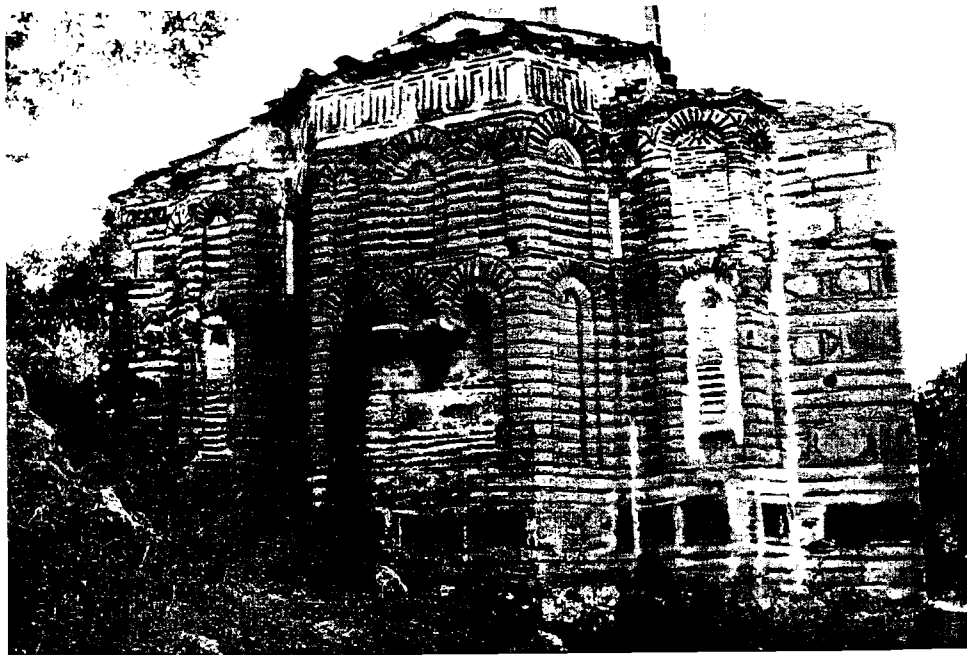
15. The Church of the Virgin at Sikelia from the South West (about 1929)



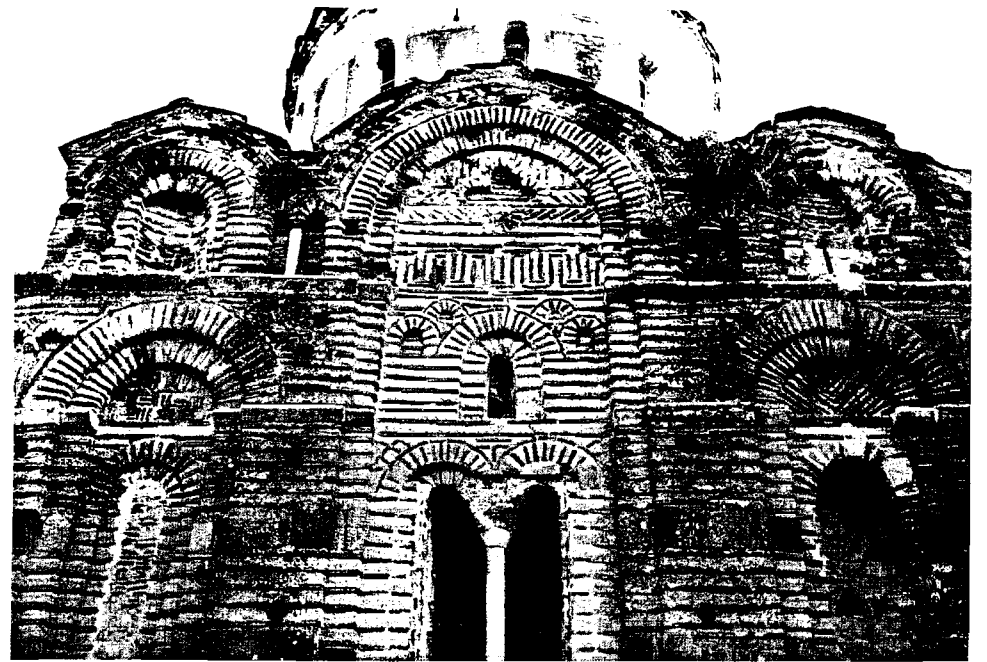
16. As 15, North Elevation (1929)



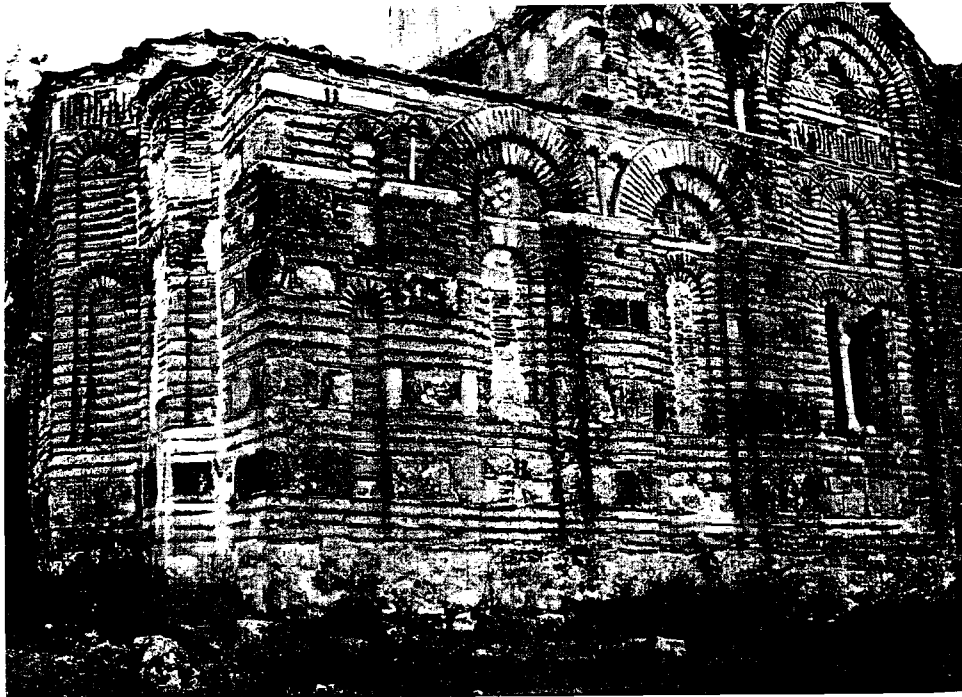
17. The Church of St. John at Chalkios, South Elevation (1929)



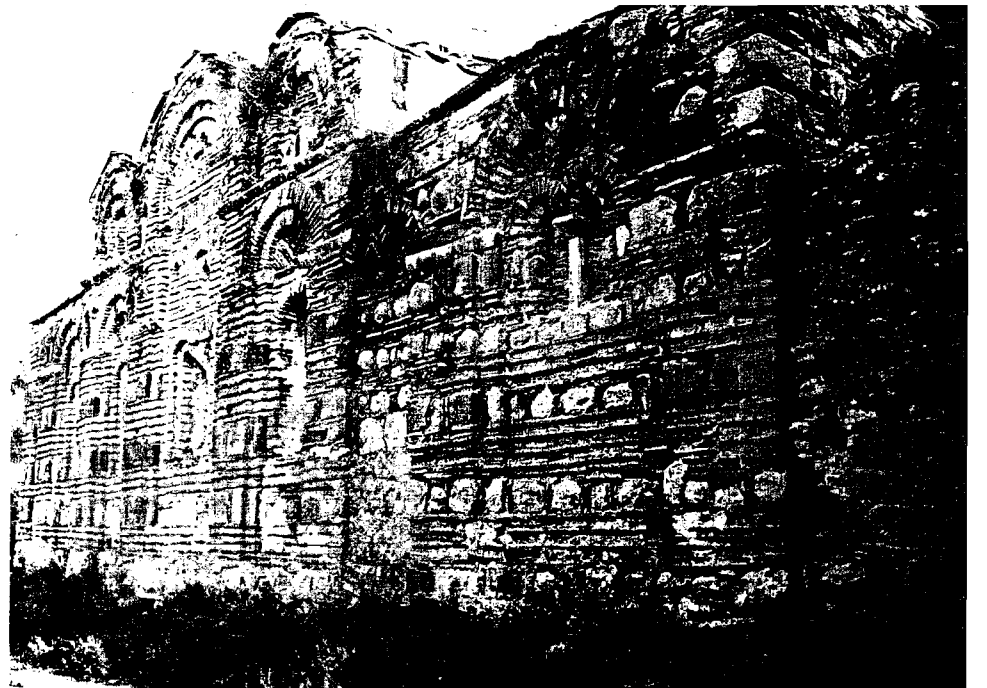
18. The Church of the Virgin at Krina from the East (1960)



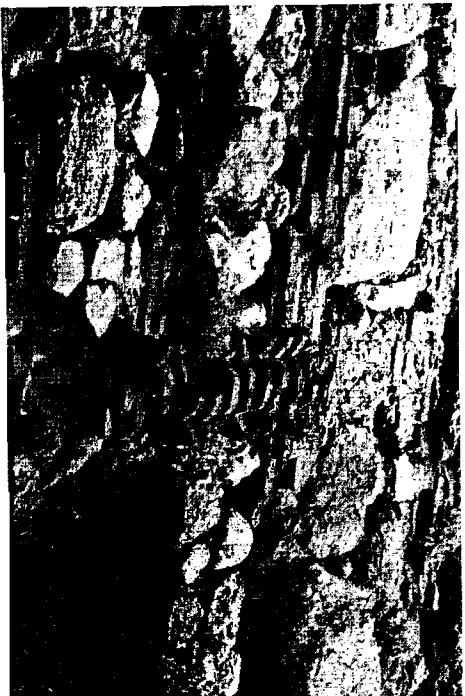
20. As 18, Central Portion of the North Facade (1960)



19. As 18 from the North East (1960)



21. As 18 from the North West (1960)



22. The Palace of Nymphaeum, West Facade Detail (1972)



23. As 22, Facade Detail (1972)



24. As 22, Interior Detail, N.W. Plaster of Central Bay looking N. (1972)



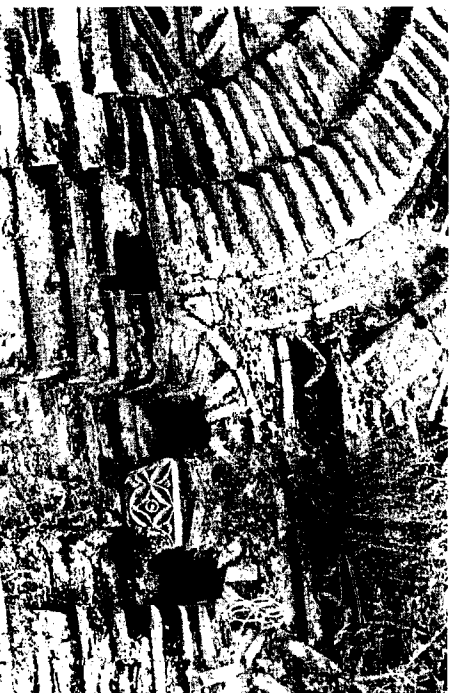
25. Jahnos Church 8, Narthex N.W. Corner (1972)



26. As 25, Western arcade of the North Facade (1972)



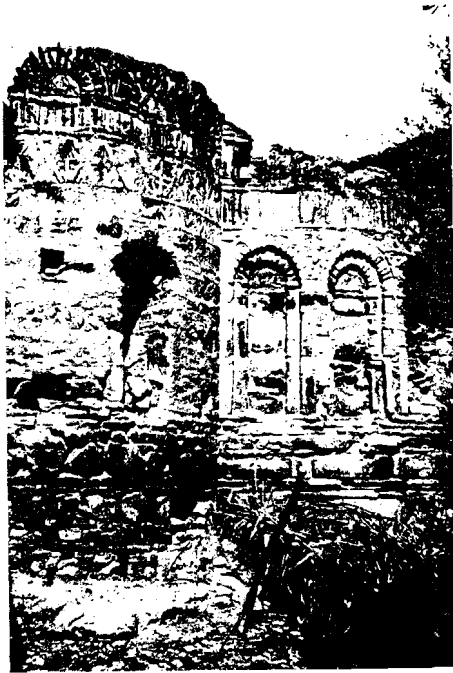
27. As 25, Eastern Arcade of the South Facade (1972)



28. The Church of the Virgin at Krina, North Facade Detail (1960)



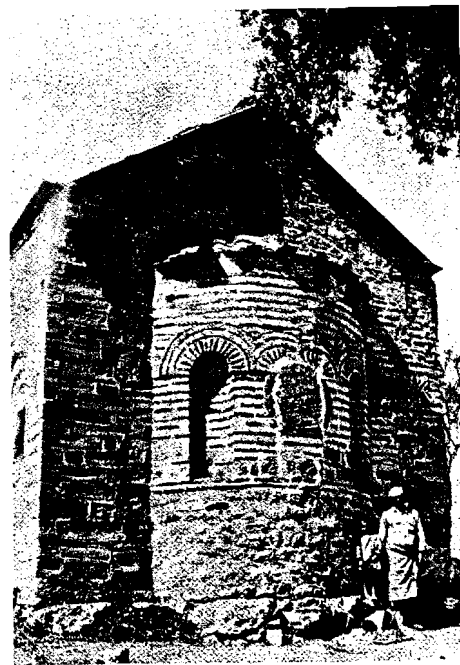
29. The Upper Citadel of Manisa, Interior Wall Detail (1975)



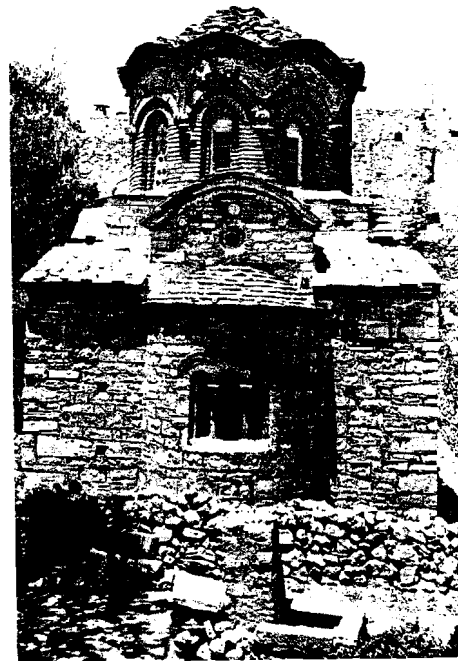
30. The Church of the Prophet Naum in Alasehir, Apse (about 1905)



31. Latmos Church 4 (Ikis Ada) from the North East (about 1906)



32. The Church of St. John at Chalkios, Apse (about 1929)



33. The Church of the Holy Apostles at Pyrgi from the East (1960)

The flanking facades are articulated by blind arcades which reflect the organization of the nave and bema plan, and each of the three faces of the apse exterior is articulated by blind arcades in two stories. The apsidal niches which flank the apse on the interior are also reflected by blind arcades on the eastern facade, while on the western facade a blind arcade is used on either side of the doorway. The fenestration of the church consists of single and binate windows located in the north facade, three windows of equal height separated by pillars in the apse, and, apparently, eight windows in the dome. All of the arcades, including those of the dome, were recessed twice not only in the zone of the arches, but also in the pilaster zone, giving the church at Sikelia an unusually unified and harmonious appearance. The sense of unity is underscored by a frieze formed of hollow clay quatrefoils like those used in Krina and Sardis E, which surrounds all of the outer arches of the facade articulation. The limited number of motifs used to decorate the lunettes also contributes to the sense of harmony. They include herringbone brickwork, horizontal courses of quatrefoils which alternate with brick courses, crosses inscribed in circles made of hollow quatrefoils, and apparently also checkerboard brickwork. Neither the lunettes of the eastern nor those of the western facades seem to have contained ornamentation. Some of the spandrels were also decorated with horizontal courses of hollow quatrefoils.

The arches of the blind arcades and windows, and the masonry facing of the dome and of much of the wall area above the spring line of the major facade arches are constructed entirely of brick, while below the spring line of the facade arches the masonry facing consists of one or two courses of well cut ashlar which alternate with three, or, more often, four to five courses of brick. As at Krina and Nymphaeum the ratios between the heights of the ashlar courses and those of the brick bands tend to be close to 1 : 1, although they vary somewhat in some areas. The mortar joints are somewhat higher than the bricks, indicating that recessed brickwork or brick filled mortar joints may have been used, even though the mortar joints are not nearly as high as those of Krina. Neither vertically set bricks nor bricks which form characters of the Greek alphabet seem to have been used at Sikelia.

*The Church of St. John the Baptist at Chalkios, Chios*

Blind arcades recessed twice also articulate the facades of the small church of St. John the Baptist at Chalkios on Chios, a building with a single barrel vaulted nave (Fig. 9, 17, 32)<sup>65</sup>. The interior is articulated only by wall

<sup>65</sup> IDEM, Pl. 51—53; BOURAS 53. The lack of accuracy in published drawings can be demonstrated in ORLANDOS' plan Pl. 51. While the exterior and interior widths given in the written dimensions of the drawing agree completely with the scaled dimensions, the interior written length, 8.65 m does not agree with the scaled dimension, which is about 9.56 m. The

pilasters which continue as ribs without interruption in the vaulting zone, and by shallow blind arcades reminiscent of the more pronounced arcades at Sikelia. The fenestration consists of a single narrow window in each bay of the lateral facades and of a binate window in the center of the apse, which is circular in plan. Two exedral niches are located in the apse exterior. Two concentric friezes of hollow quatrefoils surround the outer arches of the blind arcades, the apse exedral niches, and the apse windows, reminding of the use of the same motif in Sikelia and in Sardis E. The only ornamental brick pattern used at Chalkios seems to have been the chevron in the east facade, north of the apse, the same location in which it was used, on the northern apse, at Sardis E.

The original masonry facing of most of the upper portions of the facades is of brickwork with mortar joints which are two to three times as high as the brick courses, probably indicating that it was constructed in the recessed brick technique used at Krina. Although the lower portion of the facade facing is of ashlar and brick not usually in regular horizontal courses, in some of the pilasters and near the top of the ashlar zone well cut, more regular courses of ashlar blocks which alternate with three to four courses of brick are used, reminding of the bands of alternating brick and ashlar at Krina and Sikelia. While these, and the other specific similarities to churches of our group relate the church of St. John at Chalkios to the same general period, the similarities are not as strong as those described in most of the other churches.

#### *Other Churches on Chios*

Several other churches on Chios also show some of the characteristics described above, but either the characteristics are not, by themselves, distinctive enough, or they are not accompanied by other important features, and these churches can therefore not be convincingly attributed to our group. The church of the Holy Apostles at Pyrgi, for instance, has facades articulated by blind arcades and by friezes of hollow quatrefoils, but lacks the ornamental patterns and the alternating bands of brick and ashlar typical of the other churches (Fig. 33)<sup>66</sup>. Although the facades of the church of St. George Sykousis are richly articulated by blind arcades recessed once, twice, or three times in a hierarchically ordered sequence particularly similar to that of Sardis E, its facades are covered by plaster, prohibiting a comparison of the

over all exterior scaled dimensions of the church, excluding the apse, are close to those of a rectangle with its sides in the ratio of  $1 : \sqrt{3}$ , a rectangle which can be simply constructed with the use of a rope, and which can be directly derived from a rectangle with its sides proportioned  $1 : \sqrt{2}$ . The same construction seems to fit the plan of Latmos church 4.

<sup>66</sup> IDEM, 42ff., Fig. p. 39, with further references; ORLANDOS, Pl. 36—42.

masonry and possible brick ornamentation<sup>67</sup>. The same limitation prohibits an accurate assessment of the church of St. Galas<sup>68</sup>. The church of the Transfiguration at Managros and that of the Taxiarchs at Katarraktis both have facades articulated by blind arcades and ornamental brick patterns, and the latter church also has friezes of hollow quatrefoils<sup>69</sup>. But neither church seems to have been constructed with masonry characteristic of our group, and the small scale, as well as the monolithic supports of the blind arcades at Katarraktis are too different in character to be directly comparable with those of the other churches.

#### *The Church of the Prophet Naum, Philadelphia*

A photograph of part of the eastern facade and a brief description are all that is known of the church of the Prophet Naum in Alaşehir (Philadelphia), less than 50 km east of Sardis (Fig. 30)<sup>70</sup>. As in Sardis the major apse seems to have had five sides while the minor apses were built on a circular plan. Blind arcades recessed twice articulated the upper zone of the minor apse and, apparently, the upper and middle zones of the central apse. Each apse had a large window in the middle zone and the central apse also seems to have had a small window in the center of each arcade of the upper zone, a similar solution to that used in Latmos church 8. The arches are entirely of brick, apparently without smaller bricks and brick chips in the mortar joints. The lunettes are decorated with brick patterns including inverted "V"s like those of Krina. A frieze of high bricks set vertically, similar to the meander of Sardis E, but without open elements at the top and bottom was used between the upper and lower blind arcades of the major apse. At the same height the south apse is decorated by a rich ornamental brick frieze of crosses inscribed in lozenges which can also be read as a series of christograms. Between this frieze and the blind arcade there is a meander band constructed in the same manner, but slightly lower than the meander frieze of the central apse. Below the frieze of christograms there is still another ornamental brick frieze of alternating bricks set vertically and diagonally. The spandrels above the blind arcades were decorated by patterns which included vertically set bricks at the centers, reminding of similar, though somewhat simpler forms in the equivalent positions at Krina, Latmos church 8, and Eğri Dere.

<sup>67</sup> IDEM, P. 49—50, 53; BOURAS 53f. with further references.

<sup>68</sup> IDEM 70 with further references; ORLANDOS, Pl. 53—55.

<sup>69</sup> IDEM, Pl. 55—56; BOURAS 28f., 46 with further references.

<sup>70</sup> G. LAMPAKIS, Χριστιανικά μνημεία, έρείπια και συντρίμματα. Έπιτά άστέρες τής Άποκαλύψεως. Athens 1906, 377ff., Fig. 181. A thorough search of Alaşehir in 1975 provided no clue concerning the church, which may have been completely destroyed since Lampakis' report was written.

Below the ornamental zones of the eastern facade at Alasehir the facing is constructed of courses of ashlar which alternate with two to three courses of brick, vertically set bricks being used occasionally between the ashlar blocks. The ratios of the heights of the brick bands to those of the ashlar courses vary between about 1:1.5 and 1:2. The heights of the mortar joints of the brickwork seem to be about equal to or slightly less than those of the brick courses.

## 2. DOMINANT CHARACTERISTICS

The analytic description of the palace at Nymphaeum and of the eight churches at Sardis, Alasehir, in the Latmos area, and on Chios clearly demonstrate that these buildings are closely related by similarities, above all, in the articulation, decoration, and detailing of their facades and by the use of distinctive structural techniques. It is equally clear that the major architectural forms of the buildings, their plans, spacial solutions, and vaulting schemes, do *not* have equivalent similarities. Indeed, it is a dominant characteristic of our group of churches that the major architectural forms are *not* based upon a single church plan, that they do *not* follow a clear pattern of development, and that they do *not* have distinctive similarities. Of those churches with known plans and vaulting schemes only Sardis E has four minor domes on the diagonal axes of the major dome and six columns, only Latmos 8 is built upon the typical inscribed cross scheme with four major supports, only Krina imitates the domed single nave solution of Nea Moni, only Sikelia combines the inscribed cross scheme with the vaulted single nave basilica, and only Chalkios uses the vaulted single nave basilica solution without a dome.

Similarities which do exist among the major interior features of the churches are limited to more formal qualities. The most important is perhaps the use of simple geometric constructions which appear to underlie a number of the plans (Figs. 3—9). The most complex is the *quadratura*, which seems to have determined the location of major features in Sardis E<sup>71</sup>. The plan of

<sup>71</sup> BUCHWALD, Sardis 271 f., Fig. 7, and Fn. 32, 60, 64, 65 above. The dimensions and geometric constructions were checked in the church itself only at Sardis, and the results summarized here, based upon the published plans, must also be checked in the churches before they are finally accepted. To me the most convincing arguments in favor of the use of the geometric constructions suggested here are that they seem to fit the published plans well, that they are quite simple to perform on the building site, and that they are, for the most part, all very similar, beginning with a basic square and its diagonal to obtain major dimensions. The relevance of geometric constructions, particularly the square and sphere, at the court of Theodore II Laskaris and possible symbolic considerations are discussed in H. HUNGER, *Von Wissenschaft und Kunst der frühen Palaiologenzeit*. *JÖBG* 8 (1959) 123 ff. and E. IVANKA, *Mathematische Symbolik in den beiden Schriften des Kaisers Theodoros II. Laskaris* *Δήλωσις*

Sikelia seems to have been determined by a rectangle with its sides proportioned  $1:1+\sqrt{2}$ , that of Latmos 8 by a rectangle with its sides proportioned  $1:\sqrt{2}$ , and that of Krina by a rectangle with its sides proportioned 1:2. A rectangle with its sides proportioned  $1:\sqrt{3}$  may have determined the exterior dimensions of Chalkios and Latmos 4. All of the constructions are simple to perform, requiring only a rope, but not the use of sophisticated formulas or mathematics, and all but Sardis were used primarily to determine over all exterior dimensions.

Other characteristic similarities in the spacial solutions of the better preserved churches are also worth noting. For instance, there is an emphasis on and extension of the major axis of the church, found in Sardis E, in Krina, Sikelia, and to a lesser degree in Chalkios, at Latmos 8, and perhaps at Latmos 4<sup>72</sup>. There is also a tendency to use simple, open, strongly unified spaces, achieved at Sardis E and Latmos 8 by the lack of walls between the bema and the flanking spaces, and at Krina, Sikelia, and Chalkios by the use of simple, single nave solutions. The flanking spaces which are completely or almost completely open to the bema, and the lack of ambulatories, parekklesia, or other isolated features contribute to the spacial unity of the solutions. In most cases only the narthex is experienced as a distinctly separate spacial unit. Although the narthex does not seem to have been built together with the naos at Krina, Latmos 8, and Latmos 4, it seems to have been part of the original conception, for the differences in articulation and detailing are relatively slight, indicating that the narthex was built almost immediately after the main part of the church. At Sikelia the narthex, which is subtly marked by the somewhat wider pilaster between the two western bays and the rest of the church, is fully integrated with the naos, adding considerably to the strong spacial unity and emphasis on the major axis.

On the whole the minor architectural features of the churches cannot be compared, partly because of the poor preservation of many of the buildings, and partly because of the great variations in their architectural schemes. For instance, portions of the drums of the domes are preserved in only three

φυσική und *Περὶ φυσικῆς κοινωρίας*. *Byz. Forschungen* 4 (1972) 138 ff. P. UNDERWOOD, *Some Principles of Measure in the Architecture of the Period of Justinian*. *Cahiers Archéologiques* 3 (1948) 64 ff. traces comparable constructions. The *quadratura* was used in tombs in Asia Minor attributed to the 4th century (M. MELLINK—A. M. MANSEL, Gemlik-Kios. *American Journal of Archeology* 71 (1967) 173, implying that it was used in Byzantine architecture with long standing local roots and, probably, with symbolic implications).

<sup>72</sup> BUCHWALD 266 for Sardis. The elongation is most pronounced at Sikelia, where it is achieved above all by uniting the naos and the narthex; at Krina it is achieved by opening the bema arches directly to the space underneath the major dome and by lengthening the bema (compare ORLANDOS, Pl. 10—11 with Pl. 32—33). In Latmos 8 the east-west elongation is somewhat less pronounced, but exists in the dimensions of the major naos barrel vaults.



examples, Sardis, Krina, and Sikelia. However, while at Sardis the domes are very small, windowless, and located over the corner bays of the naos, at Krina and Sikelia they have 12, 8, and 6 windows or window arches respectively, and are located over the central portion of the naos or the narthex<sup>73</sup>. The only minor architectural feature which is comparable in many of the churches is the exterior form of the apse. In Sikelia and Chalkios, the two smallest churches, only the major apse projects. It is built on a three sided plan in Sikelia, but is circular at Chalkios. Only at Krina each of the three projecting apses have three sides. Both Sardis and Alaşehir have central apses with five sides and flanking apses on a circular plan. Latmos church 8, which has exactly the same width as Alaşehir, has the most elaborate apsidal solution, for its major apse has seven sides while each flanking apse has three.

Although facades articulated by blind arcades are a characteristic feature of all the churches, there are significant differences in their locations, in their relationship to interior features, and in their details. The most uniform articulation is found in the facades of Sikelia and Chalkios, which have only blind arcades recessed twice not only above, but also below the spring lines of their arches. In the Latmos churches the arcades are recessed twice above the spring lines, but only once in the pilaster zone, an abbreviated solution lacking the harmony and unity of Sikelia and Chalkios. In Latmos church 4 there are also secondary pilasters without a direct relationship to the arcades, still further disrupting the unity of the articulation. Blind arcades which are recessed either once, twice, or three times are used only in Sardis and in Krina. However, in Sardis the differently recessed arcades are used in a rhythmic alternation and they reflect the interior organization of the church, as they do in all of the other churches of our group, while at Krina there is a rhythmic alternation of differently recessed arcades only in the eastern facade, and a number of the arcades have no relationship to interior features. The similarity of the frieze-like application of blind arcades in the

<sup>73</sup> IDEM 266, 298 for the Sardis domes and their cylindrical drums; the drums of the major dome at Krina, and of both domes of the church of the Holy Apostles at Pyrgi are also cylindrical. The drum of the dome at Sikelia is cylindrical in the pier areas between the windows, but the window arcades appear to be almost straight in plan, giving the drum an ambiguous form which is neither quite cylindrical nor quite octagonal. The solution at Sikelia clearly illustrates the structural advantage of constructing a drum with windows on a polygonal plan (cf. IDEM, Fn. 136). The narthex dome at Krina is a modern reconstruction which may retain the original forms. BOURAS 30 considers the original drum of the major dome to be dodecagonal, with pairs of pilasters at the angles, but enough of the original masonry of the drum is extant to be certain that its form was essentially cylindrical, even though here, too, the twelve windows themselves may have been straight in plan. The existence of cylindrical drums in the cited examples may mean that the cylindrical forms at Sardis need not be derived from Greek examples, but depend upon a local tradition (cf. BUCHWALD 298).

apse solutions of Sardis, Latmos 8, and Alaşehir is particularly striking, even though they are applied to the flanking apses only at Latmos 8 and Alaşehir, and not at Sardis<sup>74</sup>. The two story, more strongly differentiated application of blind arcades to the eastern facade of Krina is closer to that of Sikelia. Only at Chalkios is the blind arcade articulation replaced by exedral niches in the apse. The typical blind arcade facade articulation is missing in the narthex of Latmos 8, in the narthex of Latmos 4, and in the palace at Nymphaeum.

The extremely rich ornamentation of the facades is even more distinctive in our group of buildings. Perhaps the most common motif is the meander, which appears in its standard form with two strains only at Krina and in its unusual double form, one meander above the other, only at Sardis and Latmos 8. While the meander at Sardis, both in its single and double form always maintains a continuous flow and steady rhythm, the meander at Latmos 8 is broken into individual units with more complex rhythms, and that at Alaşehir is abbreviated as an intensively rhythmic band, a motif which also occurs in a very short section of the south facade at Krina. The chevron is also a recurring motif, and is used at Sardis, Krina, Latmos 8, and Chalkios. Herringbone brickwork and related motifs are found at Sardis, Alaşehir, Krina, and more extensively at Sikelia. Checkerboard brickwork is used extensively at Sardis and seems also to occur at Sikelia. While patterns of lozenges or scales occur at Krina and at Latmos 8, the basketwork pattern seems to be unique to Krina and the complex frieze of crosses and christograms to Alaşehir. Recessed roundels are used in all three Latmos churches, and similar motifs also occur at Krina and Sikelia. Small "T" formations and similar forms are used in the spandrels at Krina, Alaşehir, and in the three Latmos churches. Single friezes of hollow quatrefoils are used extensively to underscore important features at Sikelia and Sardis, and two parallel or concentric friezes are used in similar locations at Sardis, Chalkios, and occasionally at Krina; in Sikelia series of parallel quatrefoil friezes are also used to fill the surfaces of lunettes and spandrels. Stone voussoires which alternate with brick are used primarily in the arches of the blind arcades in Latmos 8, but are used consistently in the arches of the blind arcades and windows in Latmos 4. Finally, bricks placed together to produce forms similar to the characters of the Greek alphabet occur in the vertical joints of the ashlar courses at Nymphaeum, Krina, and the narthex of Latmos 8<sup>75</sup>.

<sup>74</sup> BUCHWALD, Sardis 267f., Fig. 2, 3, 4, 16 for the Sardis solution.

<sup>75</sup> The poor state of preservation and the lack of knowledge concerning some of the churches must be considered when evaluating these comparisons. Bricks set together to form characters of the Greek alphabet may, for instance, have occurred in lost portions of the masonry at Sardis, Alaşehir, and in the Latmos churches, and stone voussoires may have occurred in the flanking facades at Alaşehir.

The richest use of brick facade ornamentation occurs at Krina, where almost every lunette and many spandrels are each decorated by a different pattern and the central lunettes are decorated by several friezes and patterns one above the other. While the number of patterns used at Latmos 8 is somewhat less and several lunettes of its facades are not decorated, the meander, chevron, and lozenge patterns are located in almost exactly equivalent positions there, suggesting a particularly close relationship between the two churches. A comparable richness is also achieved in the series of decorative brick friezes on the southern apse of Alaşehir. The decorative brickwork at Sardis, on the other hand, is used with far greater regularity and orderliness than at Krina, even though a relatively large number of motifs is applied to different parts of the facades; each of the four extant lunettes, for instance, is decorated by a checkerboard brick pattern. Similar regularity and orderliness is also achieved at Sikelia, where three lunettes of the same facade are decorated with herringbone brickwork and the lunettes of the eastern facade remain undecorated. At Chalkios none of the lunettes or spandrels seems to have been decorated with ornamental brickwork. Ornamental brickwork also does not seem to occur in the facades of the palace of Nymphaeum, except for the engaged column of cut brick on the west facade and the occasional bricks in the ashlar joints which were set to form characters similar to those of the Greek alphabet.

Facade facing constructed of one or two courses of ashlar which alternate with several courses of brick is also a dominant characteristic of most of our group of buildings. Its is most prominent at Nymphaeum, where the striped effect completely dominates the design of all four facades. At Krina and Sikelia the alternation of ashlar and brick in an almost constant ratio of 1 : 1 is similar to Nymphaeum, although the striped effect is not as strong and not as important in the total design of the facades. In the other churches the use of ashlar courses which alternate with brick is still apparent, but there are usually fewer brick courses in each layer of brick, the courses are not as regular, and the strong horizontal effect of the ashlar courses is reduced by occasional vertical, and sometimes also horizontal bricks in the vertical ashlar joints. In these churches the regular horizontal stratification is often concentrated in specific areas, for instance in the eastern and the eastern part of the southern facades of Latmos 8 and near the pilasters of Chalkios. Only rarely, for instance in Eğri Dere and Latmos 4, do the vertically placed bricks in the ashlar courses become so common in some areas that the visual effect becomes similar to that of cloisonné masonry.

Recessed brickwork is used in the churches at Krina and apparently also at Sikelia and Chalkios, and the closely related technique with thin bricks and brick chips in the mortar joints is used in Latmos church 8 and the facade

fragment at Eğri Dere. Thin mortar joints with heights nearly equal to those of the brick courses are common to Nymphaeum, Sardis, Alaşehir, and Latmos church 4, and the brick filled mortar joints of Latmos 8 and Eğri Dere are hardly higher. Unfortunately the available evidence concerning the masonry facing used at Sardis church E and Alaşehir is minimal.

A system of horizontal timber reenforcement inside the masonry, usually at the levels of the floor, the spring lines of the major arches, and immediately above the vaults is common to all of the buildings for which the relevant information is available, including Nymphaeum, Sardis, Latmos 4 and Latmos 8. A similar system of timber reenforcement was used in the walls of the upper citadel at Manisa, which was probably constructed during the Lascarid period (Fig. 29)<sup>76</sup>.

### 3. STYLISTIC CURRENTS

Without definitive dating evidence it is difficult to determine a broad stylistic evolution within our group of buildings. The possibility that some characteristics are due not to a general stylistic evolution, but rather to local currents or lingering traditions which exist within, and perhaps contrary to a more general stylistic context still further complicates the picture and adds to the uncertainty. The possibility that those responsible for each building, the architects and his clients in modern terminology, may have had somewhat different means available or different individual aims or wishes should also be taken into account.

Nevertheless, a comparison of numerous specific features can be used to determine some stylistic currents within our group of buildings, and in some cases also a *relative chronology*.

The common characteristics which typify the three Latmos churches within our larger group are, for instance, immediately apparent. They include the use of blind arcades which are recessed twice above, but only once below the spring lines of the arches, the frequent use of ornamental recessed brick roundels, and the relatively strong reliance upon the cloisonné masonry tradition. Stone voussoires which alternate with brick, a decorative feature which seems to occur relatively late in a given city or province in Byzantine

<sup>76</sup> C. FOSS, *Late Byzantine Fortifications of Lydia*, below, 306ff., with further references for the date; also A. HEISENBERG, *Kaiser Johannes 171f.*; BUCHWALD 287, Fig. 21; Fn. 83 below; MÜLLER-WIENER, *Stadtbesfestigungen* 72, 82 for the same type of timber reenforcement in portions of the Izmir citadel walls which are securely attributed to John II Laskaris. Similar techniques were used as early as the archaic and pre-Hellenic periods in Asia Minor (for instance K. KJELSDSEN—J. ZAHLE, *Lykische Gräber. Archäologischer Anzeiger* 90 (1975) 312ff.).

architecture<sup>77</sup>, do not seem to occur at Eğri Dere and are used much more extensively in Latmos 4 than in Latmos 8, suggesting that Eğri Dere is the earliest and Latmos 4 the latest of the Latmos group. The same chronological sequence is also indicated by the use of bricks and brick chips in the horizontal mortar joints of Eğri Dere and Latmos 8, but not of Latmos 4, for this practice is derivable from the recessed brick technique typical in Constantinople in the 11th and 12th centuries, but not thereafter. The intermediate pilasters of the Latmos 4 facades and the lack of coherence which they create seem therefore to represent a late development, which can be traced nowhere else in our group of buildings, and which seems to replace the clear blind arcade articulation found at Eğri Dere and Latmos 8. The cloisonné character of the Eğri Dere facade masonry, on the other hand, seems to be an earlier Latmos feature, and the stratified masonry with the distinctive "striped" effect seems to have been introduced to the Latmos area only after the church was built. The strong regularity of the horizontal brick layers in Latmos 4 may well represent an amalgamation of the stratified masonry tradition, perhaps introduced to the area with the construction of Latmos 8, and an older local cloisonné masonry tradition.

The church at Krina can be related to the Latmos sequence, for the close similarity in the use of specific motifs at Krina and Latmos church 8 can hardly be coincidental. The use of the chevron immediately above the meander in the major lunettes of the flanking facades in both churches is particularly striking, and the lozenge pattern in the flanking lunette of Latmos 8 is also found in a comparable location at Krina. The greater precision with which the ornamentation is executed, and the larger repertoire of motifs used at Krina makes it more likely that the Krina facades served as models for those of Latmos 8 than *vice versa*.

This conclusion is also confirmed by a comparison of the meander bands which occur on the apse facades of Krina and Latmos 8, for the double meander of Latmos 8 is much richer than the single meander used in the same position at Krina. While the Krina meander still has the classical features of the meander bands found frequently in similar positions in 12th century churches, the meander of Latmos 8 seems to represent a direct and somewhat more complex development of the similar but still more classical double meander used on one of the domes of Sardis church E. The loss of the classical form and of the regular rhythm of the meander frieze, which can be traced from Krina to Sardis, and from Sardis to Latmos 8 seems to have reached its

<sup>77</sup> Stone voussoires which alternate with brick do not yet appear in the Fenari Isa Camii south church, for instance, but are found frequently, if by no means universally, in later Paleologue buildings in Istanbul.

final stage, within the churches of our group, on the apse of the church at Alaşehir. Here the disintegration of the original motif, which can already be observed at Sardis and Latmos 8 has continued until the meander can hardly be recognized. While the meander at Latmos 8 can still be read as a variation on the original theme, the meander at Alaşehir is legible only as a simile for the original motif. The development in the details of the meander bands therefore implies a chronological sequence with Krina at the beginning, Alaşehir at the end, and Sardis E and Latmos 8 in that order in the middle.

Other characteristics of the apsidal solutions used in these churches fit into the same general pattern of development. The use of a frieze-like series of uniform blind arcades on the apsidal facades, for instance, is common to Sardis, Latmos 8, and Alaşehir, in contrast to the less uniform arcaded articulation of the Krina east facade. The arcaded articulation is still more unified and more consistent than at Sardis in the solutions at Latmos 8 and Alaşehir, where the arcades are used not only on the major apse but also on the flanking apses. This apparent tendency toward uniformity and consistency in the use of blind arcades on the apsidal facades seems to reach its final culmination at Alaşehir, where the blind arcade motif used to frame the lower windows of the major apse is also extended to each unfenestrated facet of the major apse, in contrast to the more limited use of the same motif in Latmos 8. The chronological sequence implied by the development toward greater uniformity and consistency in the use of blind arcades on the apse facades is therefore the same as that suggested by the development of the meander frieze: Sardis E, Latmos 8, and Alaşehir. The similarities in the articulation of the apse facades in these three churches are particularly striking.

Although friezes of hollow clay quatrefoils may have been used occasionally to decorate facades before the 13th century<sup>78</sup>, they were used with much greater frequency in the latter part of the 13th and in the 14th centuries. Also, they were used in tombs with ogival arches which probably date to the late 13th century in the narthex of the church at Krina<sup>79</sup>. It therefore seems reasonable to attribute the church at Krina, in which this decorative motif was used quite sparingly to an earlier date than the churches at Sikelia and Chalkios, in which quatrefoil friezes are used extensively. The

<sup>78</sup> A. H. S. MEGAW, Byzantine Reticulate Revetments, in: *Ναριστήριον εις Α. Κ. Ὀρλάνδου*, III. Athens 1966, 12, with references and a list of early examples. Also S. EYICE, Quatre édifices inédits ou mal connus. *Cahiers Archéologiques* 10 (1959) 252ff. for a tomb (?) at Tokat with closely related quatrefoil friezes and further references.

<sup>79</sup> BOURAS, Chios 30ff., with further references; ORLANDOS, Monuments, Pl. 33. The tombs partially block the windows of the narthex and must have been built later than the church.

extensive use of the same motif in the facades of Sardis E supports these attributions because, as we have already seen, the development of other motifs also suggests that Sardis E was built later than the church at Krina. While the lack of the quatrefoil frieze in many of our churches, for instance those in the Latmos area and at Alaşehir, may, perhaps, be partially due to their poor preservation, it can also be explained by assuming that the motif was primarily used locally on Chios, within our group of buildings, and was only occasionally adapted elsewhere, as in Sardis. Because of the arguments presented above this explanation seems more reasonable than to assume that the churches in the Latmos area and at Alaşehir were built before the church at Krina.

The very rich use of the quatrefoil frieze in the decorative articulation of the facades is not the only characteristic which Sardis E and the church at Sikelia have in common. In both churches the inscribed cross scheme is fused with a basilical solution, even though the church at Sikelia, which is much smaller, has only a single nave. Also, the number of motifs used in a single context, for instance in the lunettes of the blind arcades, are relatively few in both churches when compared, for instance, with the profusion of motifs used in the lunettes at Krina. The tendency toward stronger uniformity and consistency which we have traced in the apse solutions can therefore also, apparently, be traced at Sardis and Sikelia in the brick ornamentation of the facades. The three sided apse at Sikelia, articulated by blind arcades which differ in size and which are organized in two full stories does not, however, fit into the apse development of Sardis, Latmos 8 and Alaşehir; rather, it seems to depend directly on the apsidal solution of the church at Krina.

The lack of extensive brick ornamentation at Chalkios may, perhaps, be explained by assuming that it was built for humbler patrons, for it is a good bit smaller in size and simpler in form than the other churches of our group<sup>80</sup>. Although the circular plan of the apse exterior and the exedral niches in the apse facade could be interpreted as early features, distantly related, perhaps, to 11th century examples, other characteristics of the church indicate that it may have been built late within the period of our group of buildings. The church is similar, in several respects, to the church of the Holy Apostles at Pyrgi on Chios, which has been attributed to the late 13th or 14th centuries, a larger and more complex building with architectural forms based on those of Nea Moni (Fig. 33). Like Chalkios the church at Pyrgi has a cylindrical apse without blind arcade articulation, has facades articulated by blind arcades which are recessed twice, lacks extensive brick ornamentation, and is richly

<sup>80</sup> The interior and exterior articulation of the nave at Chalkios could also be interpreted as a simplification of the Sikelia solution.

decorated with series of quatrefoil friezes<sup>81</sup>. If the late attribution of the church at Pyrgi is correct, then the church at Chalkios may, perhaps, represent a late stylistic development, within our group of buildings, which is typical of Chios but is not found on the mainland. The church at Alaşehir, for instance, which also seems to have been built late within our group of buildings, had particularly rich brick ornamentation and does not seem to have been decorated with quatrefoil friezes.

Although the facades of the palace at Nymphaeum seem to have lacked blind arcade articulation and brick ornamentation, they can be related to the stylistic currents observed above with the aid of an analysis of their stratified masonry facade facing. The stratified masonry used at Nymphaeum, Krina, and Sikelia is strikingly similar not only in its general effect, but also in its regularity, scale, and in the relative heights of the individual bands of brick and ashlar. The use of similar masonry probably at Sardis E, and to a lesser degree at Latmos 8 and Chalkios is also apparent. However, while at Nymphaeum the powerful visual effect of the stratified masonry is the most important decorative feature of all four facades, in the churches the decorative effect of the stratified masonry is not fully exploited, for it is secondary to the blind arcade articulation and to the brick ornamentation. The difference is underscored by the observation that the very thin horizontal mortar joints used at Nymphaeum helped to achieve the dense coloring of the brick bands, so effective in obtaining the bold contrast between the brick and ashlar strata. The high mortar joints of the recessed brickwork used at Krina, on the other hand, tend to lighten the color of the brick bands and to dissolve their density, making them less important in the total composition of the facades and less effective.

I believe that the best explanation for these observations is provided by assuming that the palace at Nymphaeum was built before the church at Krina. The brilliant architectural effect achieved in the palace facades with the use of stratified masonry facing was then imitated at Krina and subsequently at Sikelia, Chalkios, Latmos 8, and probably in the other later churches, but in a less explicit version, watered down and mixed with various other currents and traditions. The diminishing use of stratified masonry in

<sup>81</sup> ORLANDOS, Pl. 36—42; BOURAS 42ff. believes that the church was constructed in the 13th or 14th centuries. For reasons presented on p. 278 above I do not believe that it was built during the Lascarid period. While it is possible to date the building to the 12th century because of its cylindrical apse, cylindrical drums and cloisonné masonry, the very extensive use of the quatrefoil frieze makes this interpretation seem unlikely in spite of the early examples cited by MEGAW (Fn. 78 above), in which the quatrefoil friezes are not extensive and not firmly dated. The extensive use of recessed brickwork at Chalkios, but probably not at Pyrgi also indicates that the churches are probably not contemporary.

the churches we have attributed to a somewhat later date, for instance Chalkios, Latmos 8, and Latmos 4 indicates that the initial impact of the Nymphaeum facades eventually diminished and finally faded out, at least in the provincial examples now known in the area under consideration<sup>82</sup>. The lack of ornamental brickwork and quatrefoil friezes at Nymphaeum probably indicates that these decorative features were introduced into the architectural style of the area only after the palace was constructed. The continued use of recessed brickwork in the churches on Chios after the introduction of thin mortar joints at Nymphaeum, on the other hand, should probably be explained as a tradition imported from Constantinople or the surrounding area either in the 12th or more probably, as late as the 13th century<sup>83</sup>.

The stylistic currents traced above can briefly be summarized as follows: 1) stratified masonry facing was used in the palace at Nymphaeum as the dominant, and perhaps the only decorative feature of its facades; 2) the stratified masonry of Nymphaeum seems to have been imitated in the facades of Krina, but it was used here together with profusely rich blind arcade articulation and brick ornamentation; 3) a quieter, more harmonious, more selective style, with greater regularity in the use of blind arcades and greater consistency in the choice of ornamental motifs seems to be evident in the churches at Sikelia and Sardis; 4) this tendency toward a quieter, more harmonious, more consistent style may have been responsible, in a still stronger form, for the church at Chalkios; 5) a number of characteristics found at Krina and Sardis seem to have been imitated, and also developed in the direction of greater richness and less dependence upon classical prototypes at Latmos church 8; 6) while local Latmos traditions may, for the most part, be responsible for the forms of the church fragment at Eğri Dere, probably built slightly earlier than Latmos 8, Latmos church 4 seems to represent an amalgamation of the earlier Latmos tradition with the new forms introduced in Latmos 8; 7) characteristics found at Sardis and Latmos church 8 are found

<sup>82</sup> Stratified masonry of alternating bands of brick and ashlar is a typical decorative feature of early Paleologue facades in Constantinople, for instance in the Fenari Isa Camii south church apse, the Kariye Camii parecclesion, the Fethiye Camii parecclesion, and the Tekfur Sarayı. While none of these examples is similar in detail to Nymphaeum, Krina, or Sikelia, the horizontality of the brick and ashlar bands in the Fenari Isa south church is comparable with that of Latmos church 4, one of the latest buildings in our series.

<sup>83</sup> Cf. fn. 46 above for dated examples of recessed brickwork; the technique could have been introduced to the Chios and Latmos areas by workcrews arriving from the Constantinople—Marmara—Nicaea region after 1204, for earlier examples are unknown at present in the region being considered here; local masonry is reviewed in W. MÜLLER-WIENER, *Mittelalterliche Befestigungen im südlichen Ionien*. *Istanbul Mitteilungen* 11 (1960) 71 ff.; IDEM, *Die Stadtbefestigungen von Izmir, Sigacik und Çandarlı*. *Istanbul Mitteilungen* 12 (1962) particularly 71 ff., 81 ff. and *passim*; also Foss, *Late Byzantine Fortifications*, 316 ff.

also in the apse of the church at Alaşehir, developed in the direction of still greater independence from the original classical prototypes, and in the direction of greater richness and stronger unity.

The palace at Nymphaeum, church E at Sardis, and the church of the Prophet Naum at Alaşehir seem to represent a style close to the imperial court not only because of their central location in the area of imperial Lascarid power, but also because of the unusually high quality evident in each of these buildings. The exuberant richness, monumentality, inventiveness, and high quality evident in the church of the Virgin at Krina makes it tempting to attribute this building, too, to a workshop close to the Lascarid court. Possibly the church was an imperial donation commemorating Vatatzes' victory over the Latins on Chios. While the forms of the church of the Virgin at Sikelia are still close to those of the mainland, a quieter, more harmonious, simpler style perhaps typical of a late development on Chios may be evident in the church of St. John the Baptist at Chalkios. On the other hand, a local, somewhat provincial, perhaps monastic style with a tendency toward incoherent complexity seems to be traceable in the later churches of the Latmos area.

#### 4. CHRONOLOGY

Even though it is impossible, at present, to date any of the buildings of our group accurately because of the lack of direct evidence, the relative chronology provided by the stylistic analyses can be used, together with evidence concerning the history of the area, to establish a chronological framework to which the buildings can be related.

The region in which the buildings of our group are located is relatively small, occupying a triangle which measures about 125 km (Alaşehir-Latmos) × 170 km (Latmos-Chios) × 220 km (Chios-Alaşehir), an area somewhat smaller than the Peloponnesus. Its 13th century history is dominated above all by the struggle for power between the Byzantine Greeks, the Latins, and the Seljuk Turks. Most of the area was solidly in the hands of the Lascarid emperors, and enjoyed the flourishing prosperity of their brief reign, after the first years of consolidation following the Latin conquests of 1204<sup>84</sup>. The island of Chios, on the other hand, was taken from its Latin invaders by John Vatatzes only in 1225<sup>85</sup>.

Already during the first years of Paleologue rule imperial interest shifted drastically from Asia Minor to Constantinople and the European provinces in

<sup>84</sup> OSTROGORSKY, *Geschichte* 349 ff. with the relevant sources; VASILIEV, *History* 507 ff.; GARDNER, *The Lascarids passim*.

<sup>85</sup> P. WIRTH, *Die mittelalterliche Inselwelt im Lichte der byzantinischen Kaiserdiplome*. *Byz. Forschungen* 5 (1977) 421 f. with the sources.

spite of increasing Turkish pressure after the middle of the century. Chios became a Genoese base of operations by the treaty of Nymphaeum in 1259, and was finally turned over to the Genoese in 1307<sup>86</sup>. The countryside between the Lydian cities is reported to have been ravaged by the invading Turks during the reign of Michael Paleologus, 1259—1282<sup>87</sup>. The situation was most critical in the south, where the Emirs of Menteşe, firmly established in Caria, repeatedly ravaged the undefended countryside of the Latmos area in the 1260's and 1270's, and were in control of the near-by cities by about 1280<sup>88</sup>. The coastlands and particularly the islands were under constant threat by Turkish pirates by the 1270's, a danger which increased considerably, and seems to have been augmented by Greek pirates after the dismantling of the Byzantine fleet in 1282<sup>89</sup>. Sardis did not finally fall to the Turkish forces until an unknown date not long after 1300, but historical, archeological, and numismatic evidence indicates that activity there was minimal after about 1260<sup>90</sup>. Although Nymphaeum continued to be visited by Byzantine emperors at least until the last quarter of the 13th century and Alaşehir remained in Byzantine hands until 1390, the atmosphere cannot have been conducive to the development of new architectural forms anywhere in the area after about 1260. The construction of new churches seems unlikely in the Latmos area after about 1265 and in most other parts of the former Lascarid possessions after about 1280<sup>91</sup>.

The interface between the 13th century history of the area and the stylistic comparisons presented above suggests the following tentative and approximate construction dates for the buildings:

about 1210 — about 1230 (perhaps immediately after 1222) — the palace at Nymphaeum;  
1225 — about 1240 (perhaps immediately after 1225) — the church of the Virgin at Krina;

<sup>86</sup> IDEM; a brief history of Chios is also given in BOURAS, Chios 10f. with further references; the increasing pressure of Turkish forces after the middle of the century and the catastrophic effect of the neglect of the Anatolian frontier at the beginning of the Paleologue reign are emphasized particularly in P. WITTEK, *Das Fürstentum Menteşe — Studien zur Geschichte Kleinasien im 13.—15. Jahrhundert. Istanbuler Mitteilungen* 2. Istanbul 1934, 15ff. and *passim*; also FOSS, *Byzantine and Turkish Sardis* 77ff., both with further references and the relevant sources.

<sup>87</sup> IDEM 79.

<sup>88</sup> WITTEK, *ibid.*, particularly 24ff., 41ff.; WIEGAND, *Latmos* 4. — *Die letzten Schicksale der Latmosklöster* 185ff. with further references and additional sources.

<sup>89</sup> WITTEK 45ff.

<sup>90</sup> FOSS, *Byz. and Turkish Sardis*, particularly 81ff.; BUCHWALD, *Sardis* 295ff.

<sup>91</sup> FOSS, *ibid.* 78ff.; IDEM, *Late byzantine Fortifications* 318ff.; WITTEK 16f., *passim*; KIROVA, *Un Palazzo* 278, 294f. with further references for Nymphaeum; also HEISENBERG, *Kaiser Johannes* 171ff.

about 1230 — about 1245 — the church at Eğri Dere, the church of the Virgin at Sikelia, church E at Sardis;  
about 1240 — about 1255 — Latmos church 8;  
about 1240 — about 1265 — the church of St. John the Baptist at Chalkios;  
about 1250 — about 1265 — Latmos church 4, the church of the Prophet Naum at Alaşehir.

These attributions assume that the masonry used at Eğri Dere already depends upon the recessed brickwork used at Krina even though other Krina characteristics do not yet appear there, and that the churches at Chalkios, Latmos 4, and Alaşehir were constructed, if not necessarily under Lascarid rule, at least still under the full influence of the Lascarid architectural development.

##### 5. ORIGINS AND INFLUENCES

Although a detailed examination of the origins of Lascarid architecture, and of its influence on other styles is beyond the aims of the present investigation, I would like to make the following tentative observations and suggestions.

1. The lack of coherent direction in the choice of church plans and of spacial solutions seems to be one of the dominant characteristics of the buildings we have attributed to the Lascarid period<sup>92</sup>. Although some of the differences among the spacial solutions should probably be explained by differences in local tradition, in size, purpose, and patronage, the differences are strikingly atypical for middle Byzantine architecture created in a single area within a relatively short period. In the roughly equivalent groups of churches, for instance, in 12th century southern Greece, or in 12th century Constantinople a relatively limited number of solutions are used repeatedly, for the most part, with a limited number of variations. The dissimilarities among the spacial solutions in the Lascarid churches are all the more striking because of the very great similarities in facade details.

I believe that these observations can best be explained by assuming that Lascarid architecture was essentially *eclectic* in its origins, borrowing its forms from a number of different sources, and coating them with a decorative covering or mantle to produce the *appearance* of a unified, easily identified, and lavish style. This hypothesis also explains the apparent lack of strong and direct ties between Lascarid and late 12th century Constantinopolitan architecture.

The eclectic disparity of spacial solutions on the one hand, and the unified, easily identified, lavish exterior coating on the other seems to me to

<sup>92</sup> P. 280f. above.

be the natural characteristic of an architectural style created, to a greater extent than any middle Byzantine style before it *de novo*, by a highly self-conscious, sophisticated, ambitious, but only partially established dynasty which needed new buildings as symbols for its military and political accomplishments, quickly, in an area which had little or no imperial architectural building tradition, an area which had been in an impoverished state of provincialism for centuries, and which had its strong cultural roots broken by repeated invaders the last of whom had been driven out only about a century before the arrival of the Lascarids.

2. Although eclectic borrowings, either from earlier Byzantine or other repertoires, are not unusual in pre-Lascarid Byzantine architectural history, Lascarid eclecticism seems to me to be unusual and distinctive. Previous borrowings seem only to have grafted details, decorative features, or other forms onto a strong Byzantine architectural development with recognizable continuity in basic forms which are rooted in the immediate past. The eclecticism was therefore a *secondary* characteristic, subordinate to other, stronger, and more continuous architectural currents. In Lascarid architecture, on the other hand, the eclecticism seems to be an essential and *dominant* characteristic, which was used to obtain the major architectural forms, and probably also most of the decorative forms as well. Also in contrast to earlier Byzantine periods, which borrowed from Persian and Arabic as well as Byzantine and classical sources, Lascarid borrowings seem to concentrate, for the most part, on the forms of the Byzantine and Hellenic past in an understandable attitude of fierce chauvinism. The Kufic brick forms which decorate 11th and 12th century facades in Greece, for instance, are transformed in Lascarid architecture to characters of the Greek alphabet.

3. Church E at Sardis seems to be unique among the churches we have attributed to the Lascarid period in that it may have been designed specifically to meet Lascarid functional and iconographic needs. I have pointed out elsewhere that church E has close affinities with the church of the Virgin Hodegetria in the Brontochion Monastery (Afentico) in Mistra, built in the first decade of the 14th century<sup>93</sup>. The similarities include most features of the plan and vaulting, and probably also the use of the *quadratura* to determine size and location of major features.

It has been suggested that the galleries of the Afentico owe their origin to the court ceremonial of the Despot of Mistra<sup>94</sup>. The architectural solution of the Afentico seems, therefore, to have been designed specifically for the use of the court, suggesting that the new design was necessary because no

<sup>93</sup> BUCHWALD, Sardis 281 ff.

<sup>94</sup> IDEM 283, Fn. 56 with further references.

suitable churches existed for the purpose in the city, where there had been no court previously. This same precondition for the design of the Afentico existed not only in Mistra in the early 14th century, however, but also in the centers of Lascarid power in western Asia Minor, for instance Magnesia ad Sipylum or Philadelphia, almost a century earlier.

It is impossible, today, to know whether church E at Sardis had galleries, and there is no known reason to believe that court ceremonial was important in church E<sup>95</sup>. Whether or not church E was built with galleries, I suggest, as a working hypothesis, that the church was built in imitation of a more important Lascarid building which did have galleries, and which was designed to meet the demands of the imperial Lascarid court in one of the political and cultural centers of the area, perhaps Magnesia, Philadelphia, Sosandra, or elsewhere in Asia Minor.

The underlying plan of Sardis church E, however, is not an invention of Lascarid architects. Two churches in Constantinople, those now known as Bodrum Camii and Kilise Camii have almost exactly the same interior features, including the pendentive domes over the spaces flanking the bema, the almost square central bays of the narthex, and the use of the *quadratura* to regulate the plan and section<sup>96</sup>. The Kilise Camii also has almost exactly the same dimensions, and the Bodrum Camii is only slightly smaller<sup>97</sup>. The important differences are the lack of basilical emphasis, the lack of domes over the corner bays of the naos, and, assuming that there was a Lascarid prototype with galleries for Sardis, the lack of galleries in both Constantinopolitan churches. As a further working hypothesis I would therefore like to suggest that the "Mistra church type" was invented by Lascarid court architects in Asia Minor by combining a specific Constantinopolitan inscribed cross church plan, the plan of an early Byzantine column basilica, the five

<sup>95</sup> IDEM 283. Although no direct evidence of galleries was found in the excavations, galleries could nevertheless have existed.

<sup>96</sup> T. F. MATHEWS, *The Byzantine Churches of Istanbul*. University Park and London 1976, 209 ff., 386 ff. with earlier references. The application of the *quadratura* to these churches was examined on the basis of the best available published plans, a hazardous method considering the inaccuracies of Byzantine construction and of many modern plans. As in the Mistra group, the basic square is applied also to the cross section, for the width of the naos is equal to its height measured to the major string course under the dome. The entire interior space of the church, including the narthex but excluding the dome, can therefore be inscribed in two adjacent cubes which meet underneath the center of the dome. The observations made in Fn. 32 above are also relevant here.

<sup>97</sup> The measurements were taken from the best available published plans, and should be treated with the same caution advised in Fn. 96 above. The variations in the dimensions of Sardis E and the Kilise Camii are apparently not greater than about 0.50 m, suggesting that a basic unit, perhaps the side of the square which determined the location of the four central columns, was the point of departure for both plans.

domed solution now known in 12th century examples primarily in Greece and the southern Balkans<sup>98</sup>, and the gallery solution reminiscent of that found in St. Eirene, the Gül Camii, and Dereagzi<sup>99</sup>. The artificial way of putting features together in an “*ad hoc*” manner<sup>100</sup>, without regard to their original context in Byzantine architectural vocabulary seems to me to be atypical in Byzantine architectural history<sup>101</sup>, but is entirely consistent with the eclectic approach of Lascarid architects observed above. It is the inventiveness made possible by this approach which seems to be the strong and particular contribution of Lascarid architects.

The plans in Fig. 3—9 (except 4) were redrawn after those shown in EYICE, İzmir; WIEGAND, Latmos; ORLANDOS, Chios; the exact references are given in the footnotes above. No attempt was made to obtain greater accuracy in the dimensions than in the published plans, but numerous overt errors have been corrected, and all plans were drawn and reproduced using the same scale and drafting symbols so that the monuments can be readily compared. The photographs in Figs. 10, 11, 14 and 31 are taken from WIEGAND; Figs. 15—17 and 32 from ORLANDOS; Fig. 30 from LAMPAKIS, Christianika. The remaining photographs were made by the author. The earlier photographs and plans are collected here so that a relatively clear picture of the monuments can be obtained without constant reference to other publications, some of which are not readily available.

<sup>98</sup> BUCHWALD, Sardis 279ff.

<sup>99</sup> H. BUCHWALD, The Church of the Archangels in Sige near Mudania. Vienna 1969, 52ff. with further references; H. SCHÄFER, Die Gül Camii in Istanbul (*Istanbul Mitteilungen*, Beiheft 7). Tübingen 1973; U. PESCHLOW, Die Irenenkirche in Istanbul (*Istanbul Mitteilungen*, Beiheft 18). Tübingen 1977; H. HALLENSLEBEN, Untersuchungen zur Genesis und Typologie des “Mistratypus”. *Marburger Jahrb. f. Kunstwiss.* 18 (1966) 105ff., many of whose keen observations are relevant whether or not my speculations about the origin of the type in Asia Minor are correct. While I agree with his observation that the narthex was a later addition at the Afentico, as it was in Latmos churches 4 and 8 and at Krina, in all of these examples the narthex seems to have been planned together with the church and to have been built immediately after the naos, even though the naos may have been built with its own western facade. The church of Saint Sophia in Vize, Turkish Thrace, may occupy an important place in establishing the development of the Mistra type, because its lateral galleries are supported by columns closely comparable to those of the Mistra churches. While its construction date remains uncertain, it may have been built as early as the late 8th or the 9th century, and its articulation seems certainly pre-Lascarid. (MANGO, *Architettura* 172, T. 184, 185; S. EYICE, *Les monuments Byzantins de la Thrace Turque*, in: XVIII<sup>e</sup> Corso di Cultura sull'Arte Ravennate e Bizantina. Ravenna 1971, 293ff., both with further references.)

<sup>100</sup> The term is borrowed from contemporary architectural criticism, where it is used to designate the same tendency in some contemporary buildings.

<sup>101</sup> I have attempted to describe the slow, probing, step by step method of achieving new architectural forms, which I find to be more typical of pre-Lascarid Byzantine architecture, in the period between the late 6th and early 10th centuries in BUCHWALD, *The Church of the Archangels*, particularly 36ff.