

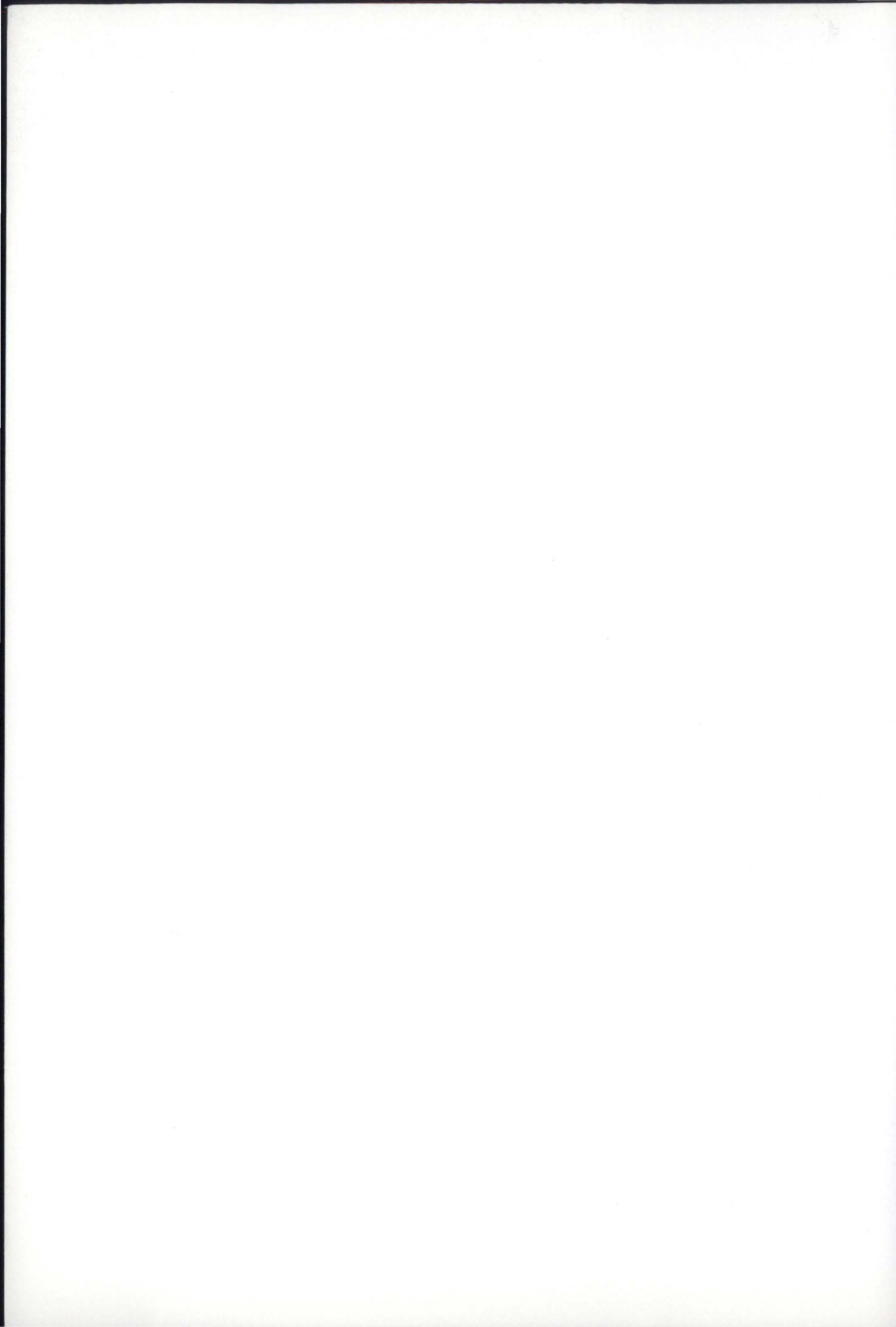
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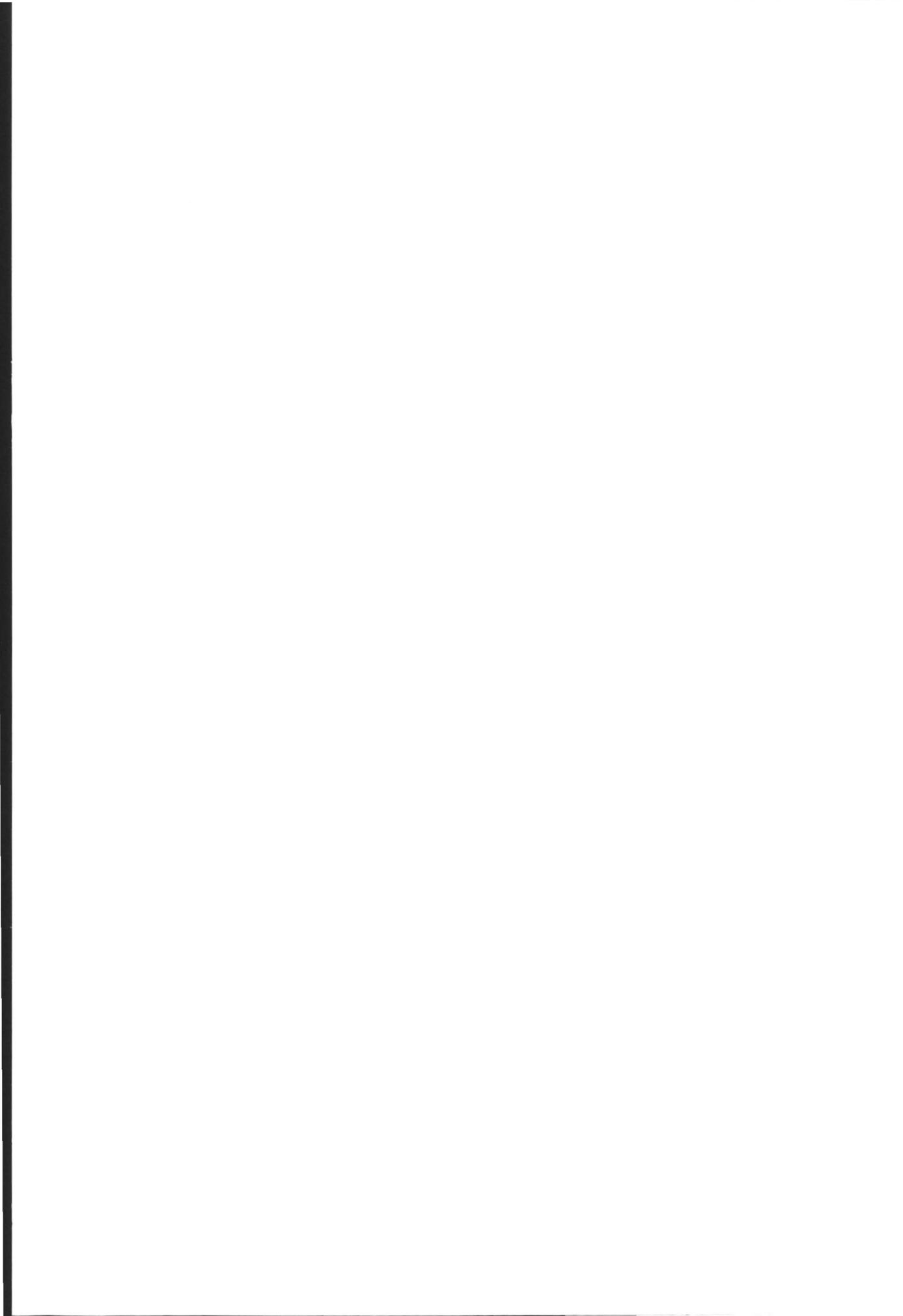
ANASTASIOS K. ORLANDOS

**BYZANTINE ARCHITECTURE**



ATHENS 1998





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Panepistimiou 22, Athens 10672  
Fax (01) 3644996

ISSN 1105 - 7785  
ISBN 960 - 7036 - 64 - 6



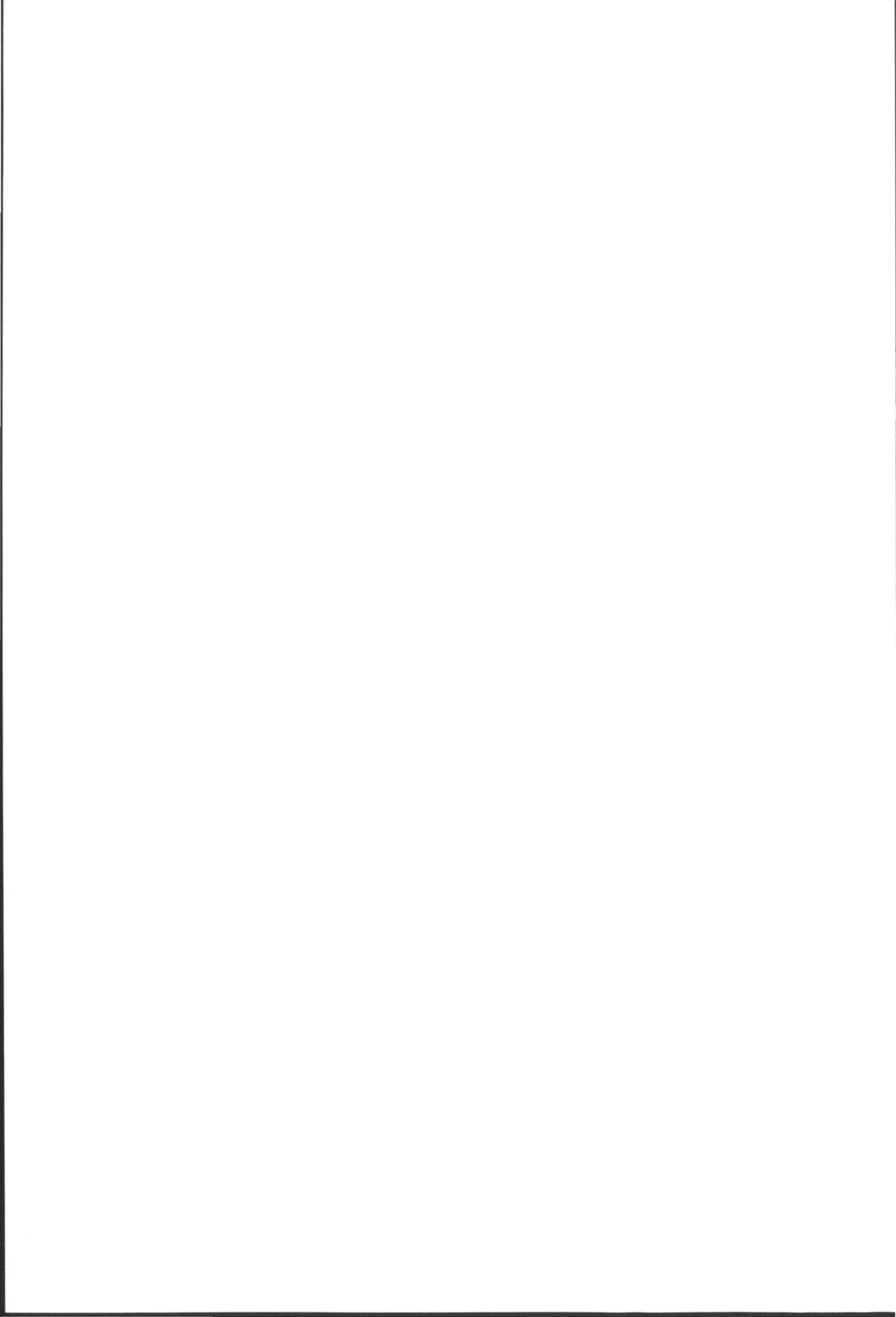
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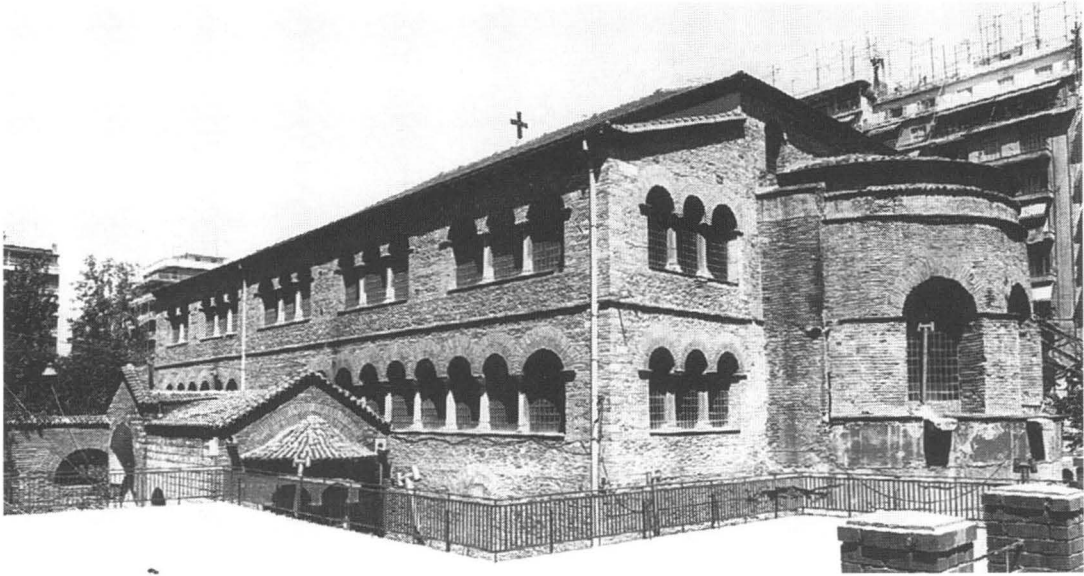
## **BYZANTINE ARCHITECTURE**

**D**uring the Early Christian period (4th to 6th century) two basic types of church were in use: the one rectangular and elongated; the other centralized, that is to say, symmetrically disposed about a central point. Neither of these types was devised by the Christians, both were legacies from Greek and Roman architecture.

1, 2  
3 The rectangular type, generally known as the *basilica*, includes buildings of large size, directed to the East, well ventilated and brightly lit, and covered by wooden roofs. As in the ancient Egyptian temples, so in the Christian basilicas, the church proper was always preceded by a large square open forecourt—the *atrium*—surrounded by porticoes and with the fountain for purifications, known as the *phiale*, in the middle. The portico next to the church usually forms a closed vestibule, narrow and long, and extending to the full width of the church. This was the *narthex* from which the church was entered through doors or, in the case of the central opening, often an arcade of three arches.

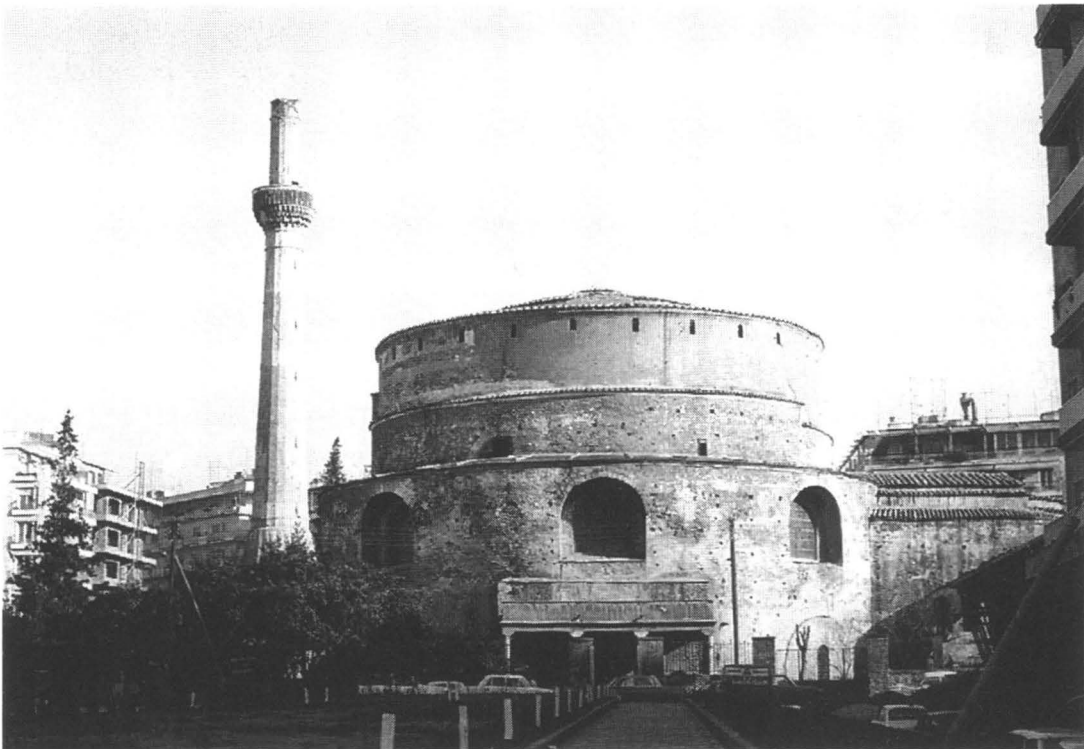
Atrium and narthex were assigned to the catechumens and the penitents while only the baptised Christians were admitted to the church proper.

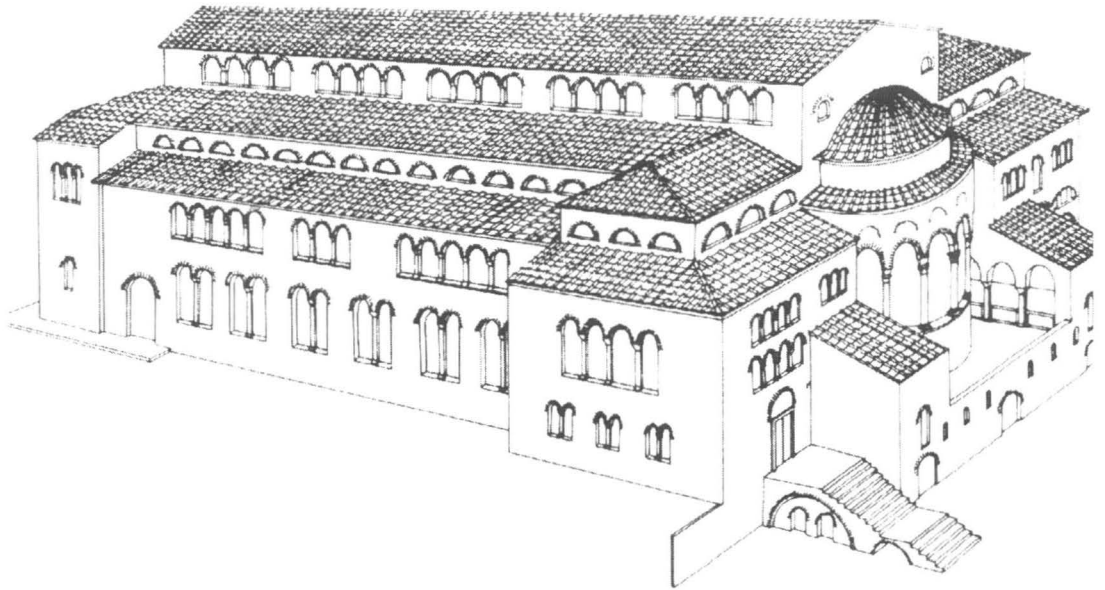
The church was divided into three, or sometimes five aisles divided by rows of columns running East to West and sometimes by two rows of columns superimposed. The central division, double the width of the side-aisles, rose high above them and was lit by large clerestory windows; at the East end it was closed by the wide apse of the sanctuary. Here, in the middle, was the altar or Holy Table (*Hagia Trapeza*), protected by the *ciborium*, a baldacchino in the form of a hemisphere carried on four columns. Benches curving round the semi-circular apse of the sanctuary were used to seat the higher clergy (the *Synthronon*), above them at the centre was raised the more sumptuous bishop's throne. A low balustrade or enclosure of marble, consisting of panels carved in relief and set between posts, separated the sanctuary



*Fig. 1: Basilica of Acheiropoietos at Salonica, from the South-East.*

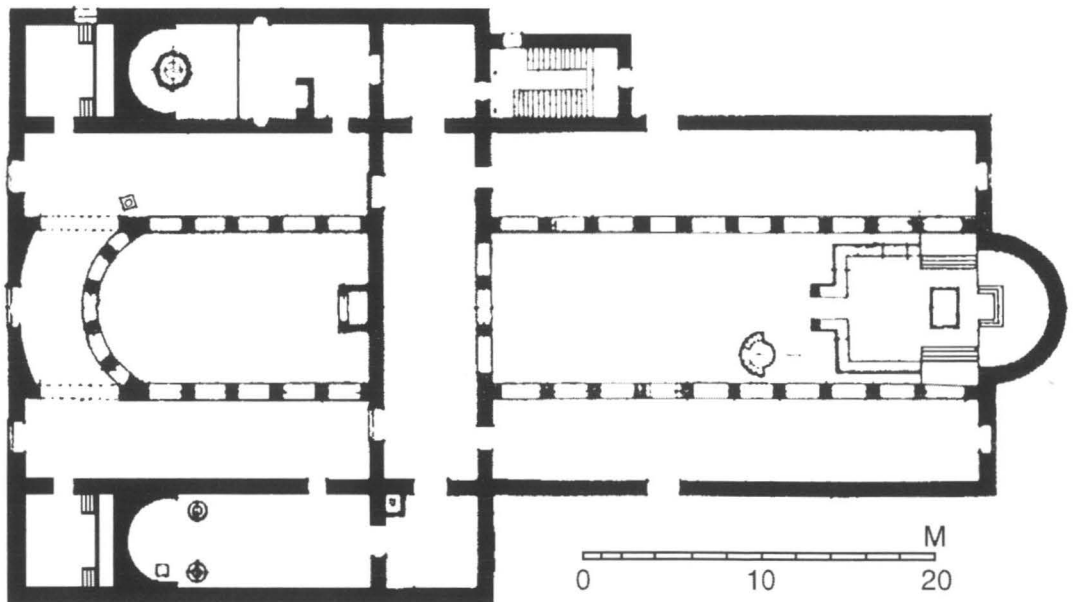
*Fig. 2: Rotunda of St. George at Salonica, from the South.*





*Fig. 3: Basilica of St. Demetrios at Salonica, from the South-East.*

*Fig. 4: Plan of basilica at Phthiotian Thebes, Thessaly.*



from the main part of the church, where stood the *ambo*, sometimes in the middle, sometimes to one side. This pulpit, reached by one flight, or often two opposite flights, of steps, served for readings from the Gospels or the Acts of the Apostles as well as for preaching.

The form of the Early Christian basilica just described resulted not from arbitrary juxtaposition of various and more or less disparate architectural elements, but was a deliberate architectural creation full of sensibility. This appears in the alternations of direction and lighting in its successive parts – bright atrium leading to dark narthex elongated transversely to the axis of the great nave beyond, which was bathed in light and in width harmoniously proportioned – both to the width of the lower aisles and to its own greater height. All this had one object in view: the commodious ordering of the space, both as to its height through the clerestory towering above and also as to its depth through the rhythmic procession of the long colonnades to the sanctuary, giving it the appearance of infinite length. It is precisely this directional element in the internal space and the resulting predominance of the long axis that constitute the distinguishing characteristic of the Early Christian basilicas.

5, 6

Altogether different were the centralized buildings, designed initially as *martyria* (tomb-shrines of martyrs) and baptisteries. They were roofed at the centre by a large domical vault which, exercising the same thrust in all directions, demanded a uniform disposition of the building around the centre to neutralize this thrust. In the centralized buildings the longitudinal axis of the basilicas was replaced by a vertical axis rising above the point which was the focus of the building's function.

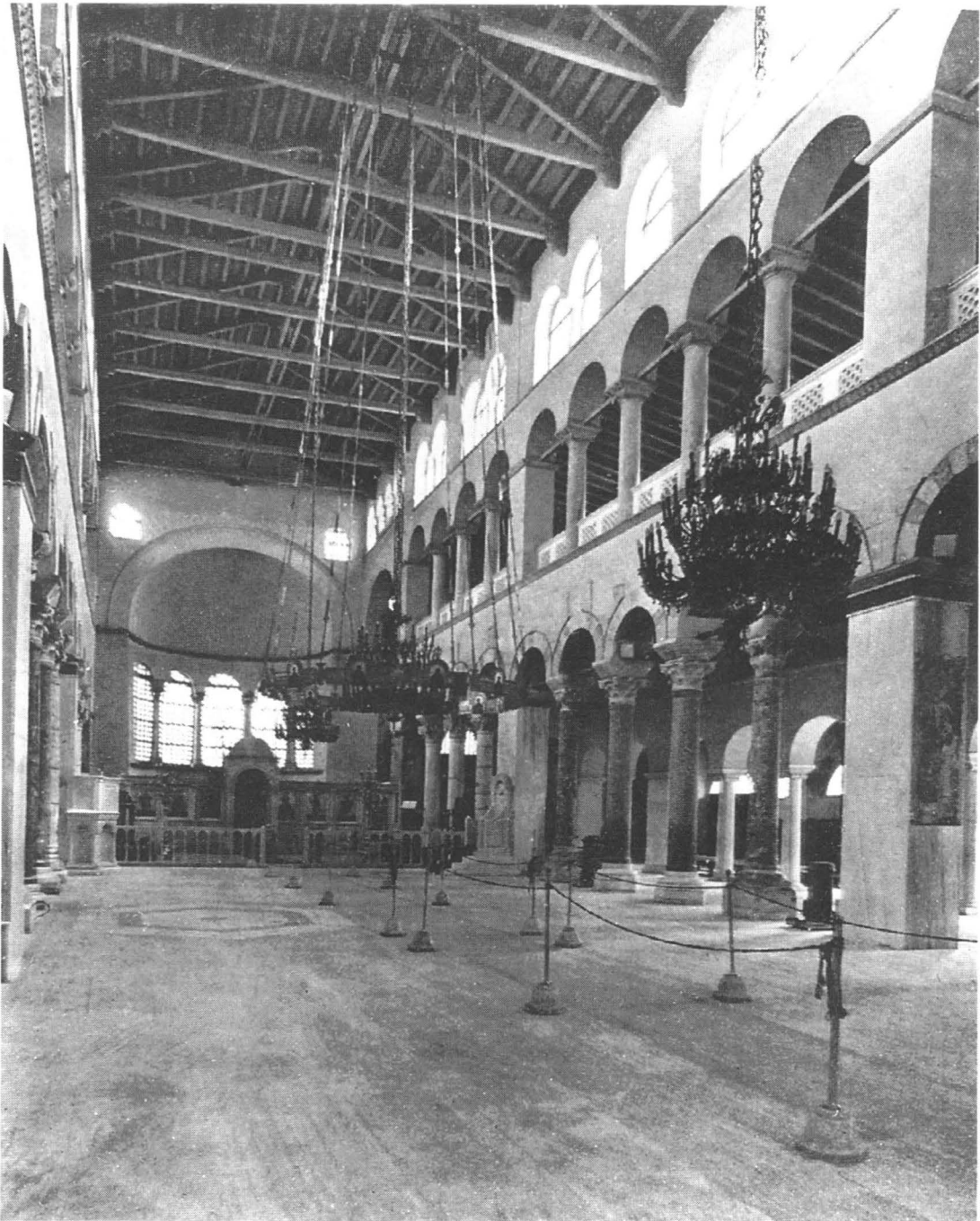
When later the centralized building was adopted for use as a church, liturgical requirements demanded the addition on the East side of an apsidal sanctuary. The building thus developed a minor longitudinal axis. But the vertical axis remained dominant and this

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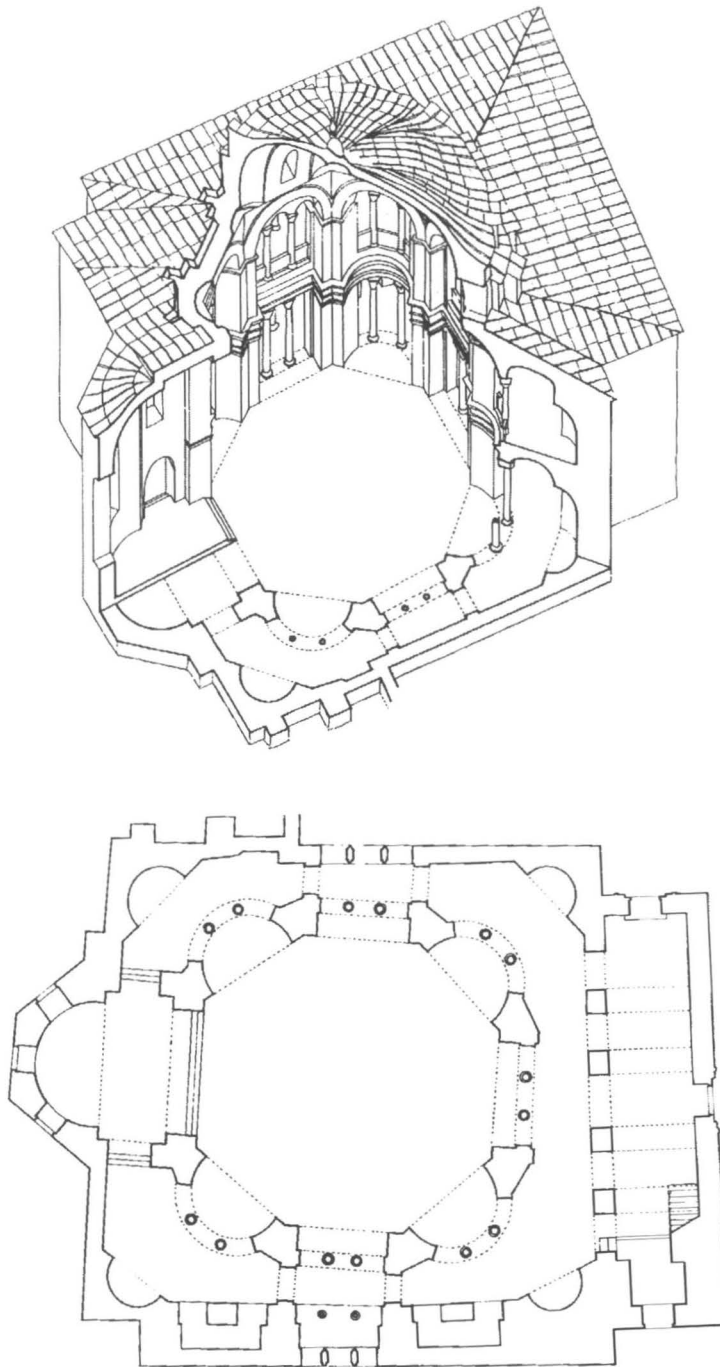




*Fig. 5: Basilica of Acheiropoietos at Salonica, nave, central aisle facing East.*



*Fig. 6: Basilica of St. Demetrios at Salonica, nave, central aisle, facing East.*



*Fig. 7: Section and plan of centralized church of SS. Sergius and Bacchus at Constantinople.*

drew the eye of the faithful toward the great hemisphere of the dome, the earthly image of the vault of heaven.

The combination of two axes in the centralized churches was the fore-runner of a closer combination of the basilica with the centralized scheme in a new architectural form, which prevailed from the sixth to the tenth century, the type of the *domed basilica*. In this type all parts of the church were now covered by masonry vaults and the atrium had disappeared. The hemispherical vault, or dome, of the centralized building, which initially was placed immediately before the sanctuary, was moved gradually westwards and found its place at the centre point of the length of the church, and supported on four massive piers, between which were retained, both on North and South, the colonnades characteristic of the basilicas both at ground and gallery levels. The most perfect, and at the same time the most original and the boldest example of the domed basilica was St. Sophia in Constantinople, a masterpiece of Byzantine architecture built under the Emperor Justinian, between A.D. 532 and 537, to the design of the Greek architects Anthemius of Tralles and Isidore of Miletus. Its vast dome, 31 m. in diameter, rises to a height of 54 m. above the floor. To resist its great thrusts two semi-domes of the same diameter as the main dome were constructed to East and West immediately below it, increasing its effect and doubling the area covered. Each of these semi-domes is carried on a great semi-cylindrical apse two stories high and pierced by two semi-circular exedras.

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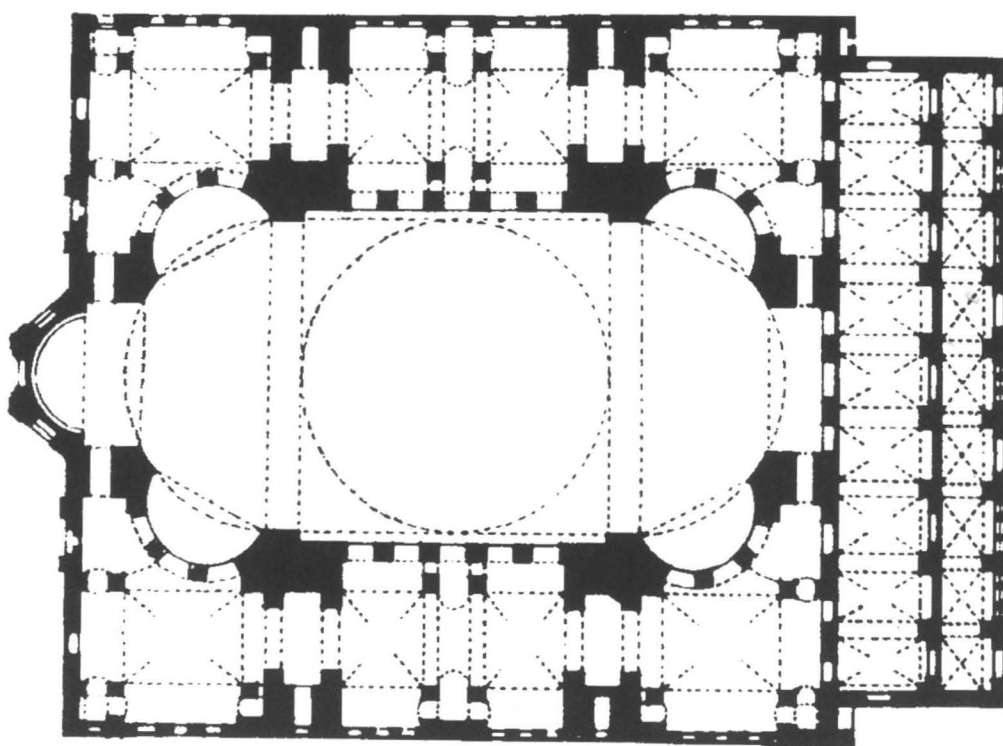
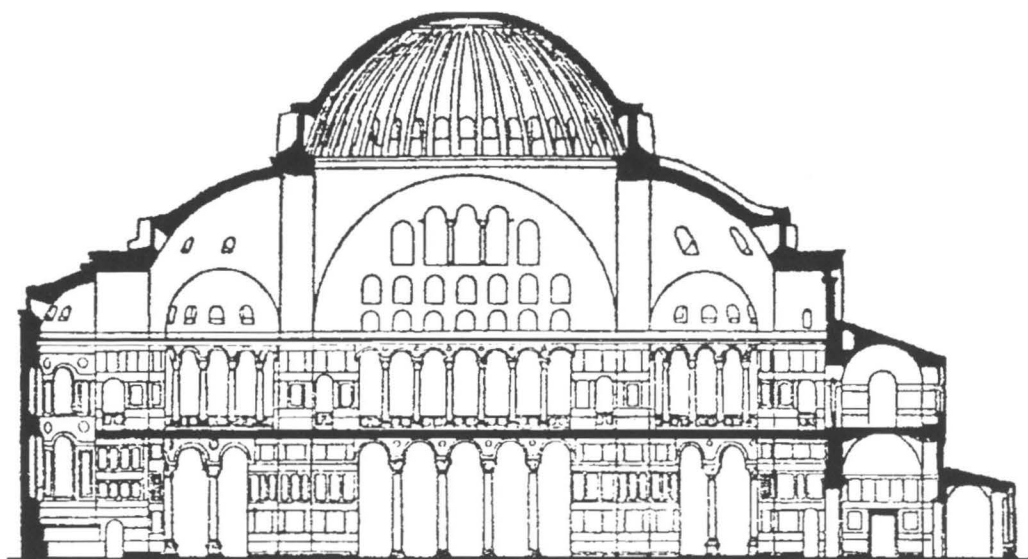
In contrast to this arrangement to East and West, on the North and South the corresponding piers were linked above the gallery arcade by two semi-circular arches of great diameter but relatively small thickness, of which the soffits were in each case concealed internally by a thin tympanum pierced by windows and arched recesses. Thus the central dome was supported by four great arches: two forming the front edges of the semi-domes and two arching round the lateral



*Fig. 8: St. Sophia (domed basilica) at Constantinople.*

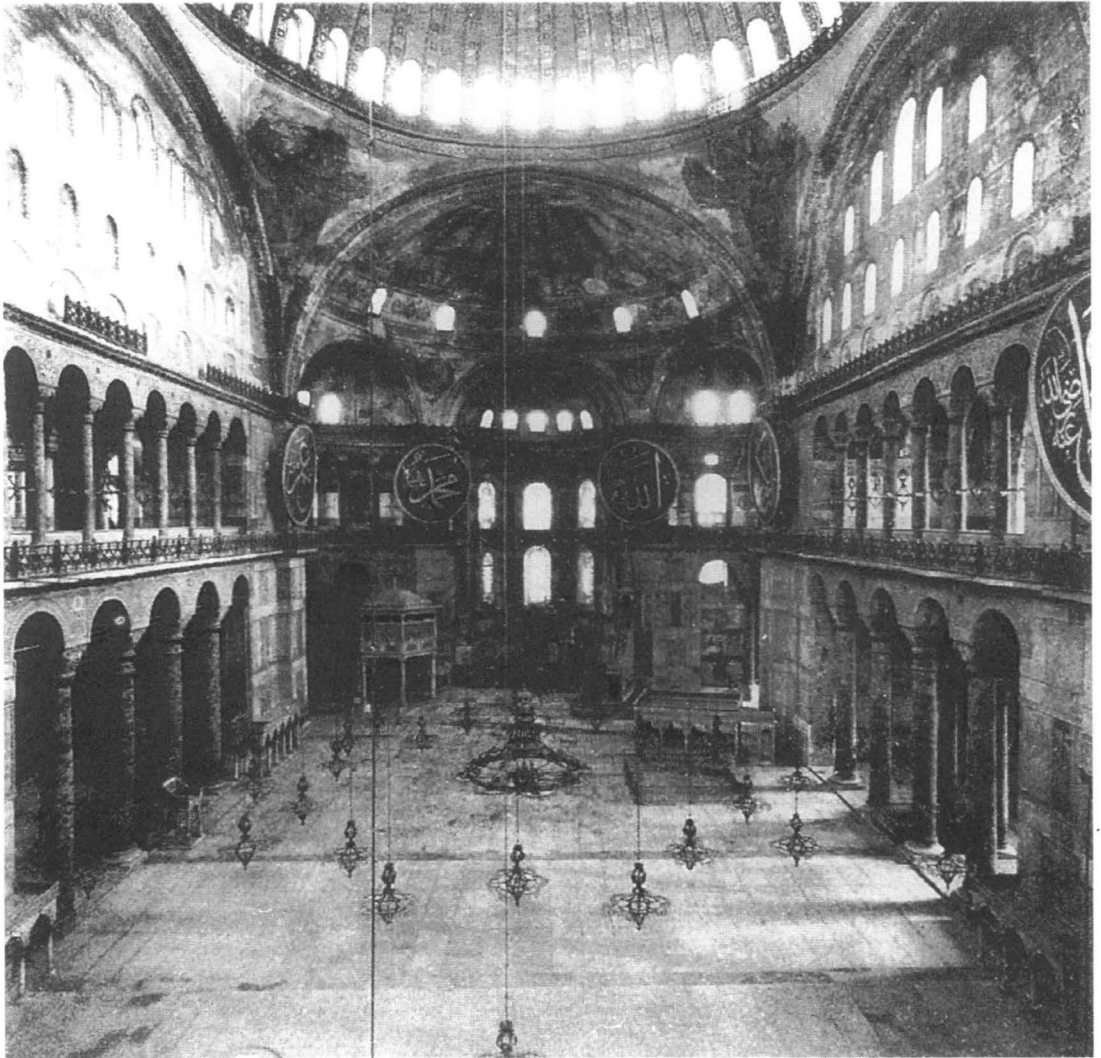
*Fig. 9: St. Sophia at Constantinople, from the South-East.*





*Fig. 10: Section and plan of St. Sophia at Constantinople.*





*Fig. 11: St. Sophia at Constantinople, central aisle facing East.*

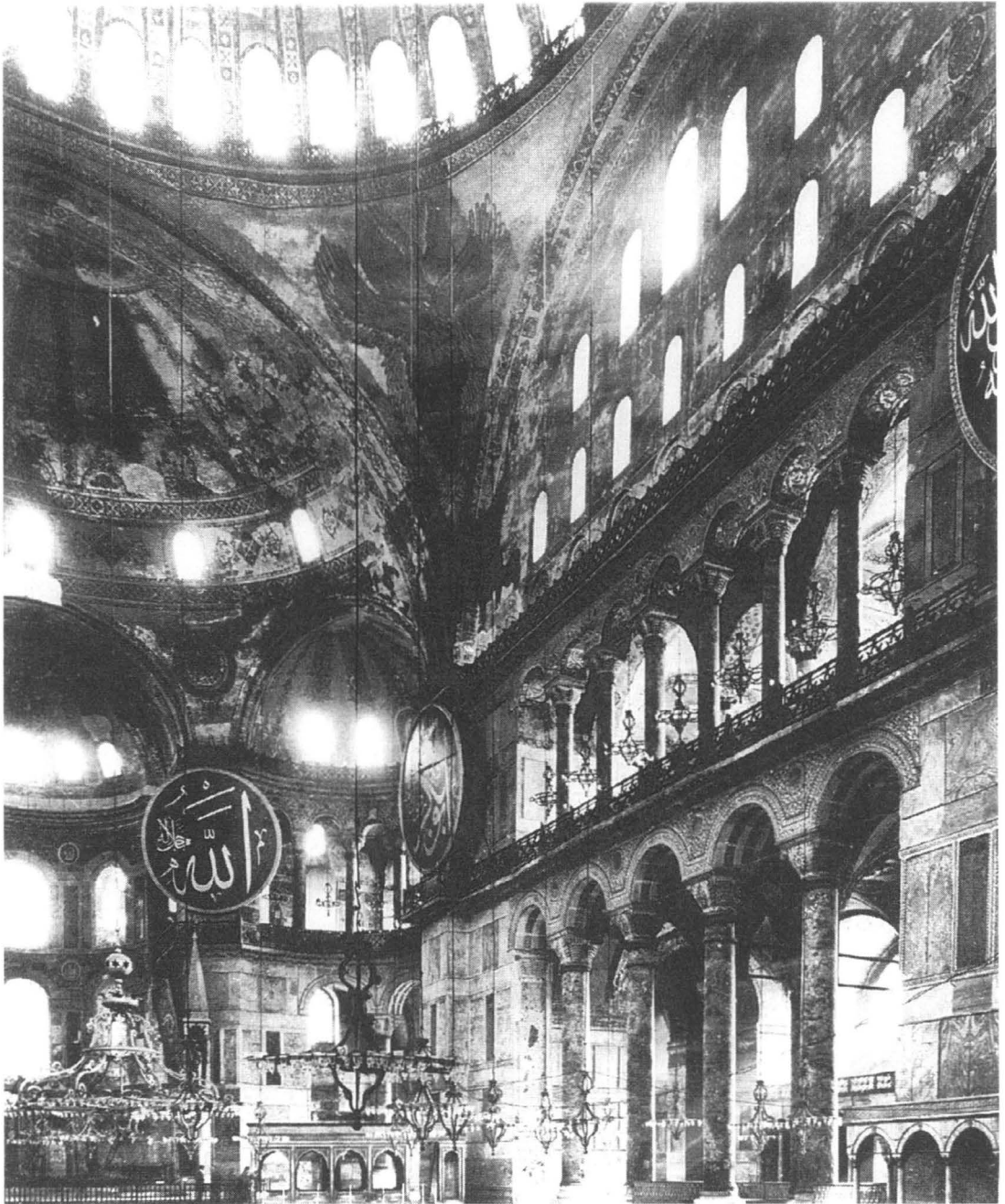


tympana; the transition from the square formed by these four arches to the circular base of the dome was effected by four spherical triangles or *pendentives* filling the spaces above the springs of the arches.

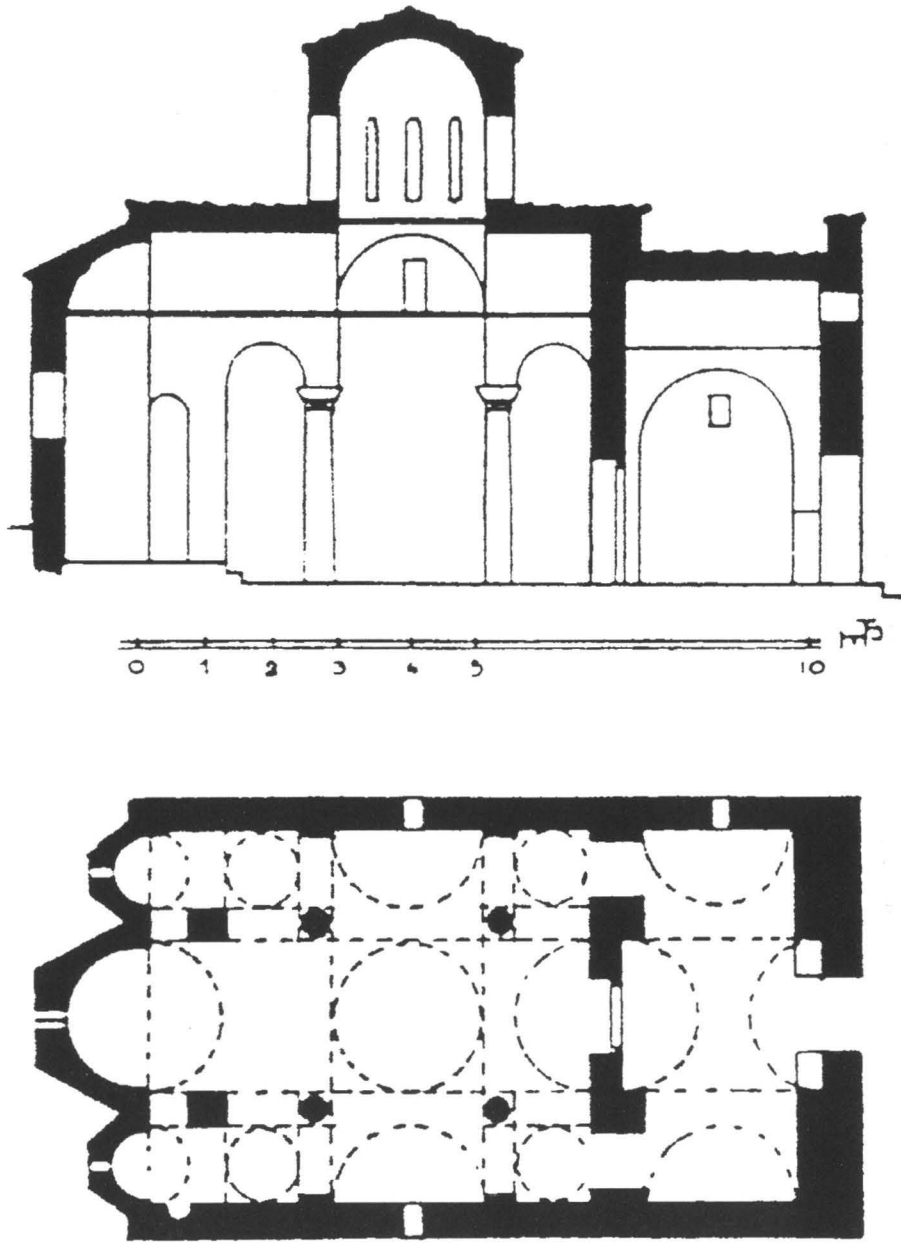
By this masterly arrangement, the high and elongated central area of St. Sophia confronts the visitor suddenly, as he enters through two successive long and narrow narthexes which are only moderately lit and set transversely, into a vast brilliantly lit hall, above which is suspended "from the heavens as by a chain of gold" the central dome, which the crown of 44 windows opening in its base give a light ethereal quality. This astonishing space, with its powerful superimposed arches and vaults, is ringed round with a thin shell, here pierced by arched openings and windows, and there dissolved into colonnades, to give the whole a strange, an almost disembodied character. The interior of St. Sophia kindles in the spectator a deep and complex feeling of awe and wonder. 12

From the domed basilica the Byzantine architects, proceeding rationally and animated by that love of simplicity and clarity which was their Hellenic inheritance, created a new type of church, simpler and more austere: the *inscribed-cross type with dome*, which endured from the tenth century until after the fall of Constantinople, both in the capital and in Greece, where many examples are still preserved to this day. In this type, the piers supporting the dome, the massive proportions of which had previously obstructed vision and entailed much loss of valuable space, were now made much smaller. They often consist of simple columns. This thinning-down of the supports was made possible by transmitting part of the thrust of the central dome to the walls enclosing the building by means of four vaults radiating from the four arches supporting the dome. These four vaults extend to the four walls enclosing the building, and the small compartments remaining in the four corners are covered by lower vaults, or sometimes by little satellite domes, which themselves contribute to the neutralization of the thrusts. 13

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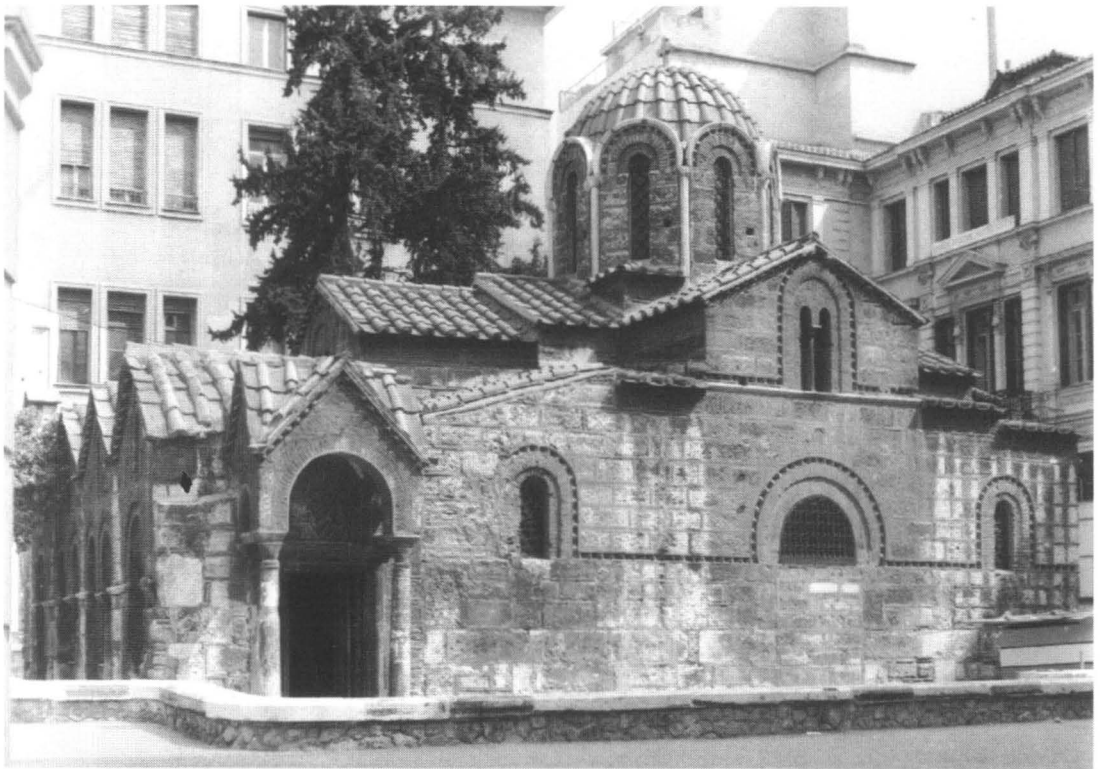
*Fig. 12: St. Sophia at Constantinople, central aisle (detail).*



*Fig. 13: Section and plan of four-columned inscribed-cross church with cupola (Catholicon of Asteriou Monastery).*

In these churches, the four main vaults are arranged in the form of a cross, the arms of which are clearly defined by the higher roofs that cover them. At their intersection rises the elegant polygonal dome with an arched window in each face and at each angle a colonnette of brick or marble. In Greece the four vaults are covered by pitched roofs ending in pointed gables, but in Constantinople and areas directly subject to its influence (Salonica, Mt. Athos and Mistra) the gables followed the curved form of the vaults from the twelfth century onwards.

The system of construction also now differed. In the early basilicas and up to the tenth century, undressed stone alternating with bands of



*Fig. 14: Kapnikarea church at Athens, from the South.*

five or six courses of thin bricks was employed. From the eleventh century, however, in conjunction with the smaller size of the churches, dressed masonry was used in Greece, but of a special type, in which each individual rectangular stone was surrounded by a frame of brick. But in Constantinople and its immediate sphere of influence, the churches were often built entirely of brick which gave them greater scale and plastic quality.

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The new type of church replaced the heavy form of the domed basilica with a building of smaller dimensions but better articulated. Its component parts build up in ordered succession to the crowning feature of the dome, while the subsidiary domes or vaults that cover



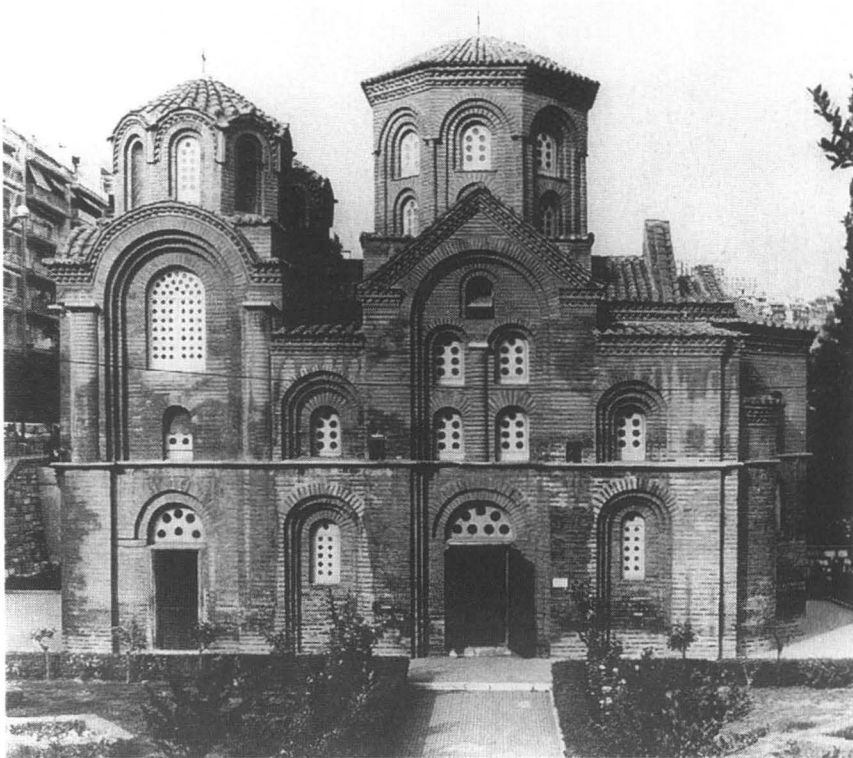
*Fig. 15: Catholicon of Daphni Monastery, from the East.*

the narthex contribute to the pleasing effect which the whole building presents.

17 A variant of the inscribed-cross church was employed for the  
18 churches of the monasteries on Mt. Athos, in which each of the lateral  
arms of the cross terminates in a semicircular apse, known as a *choros*  
and serving a liturgical need.

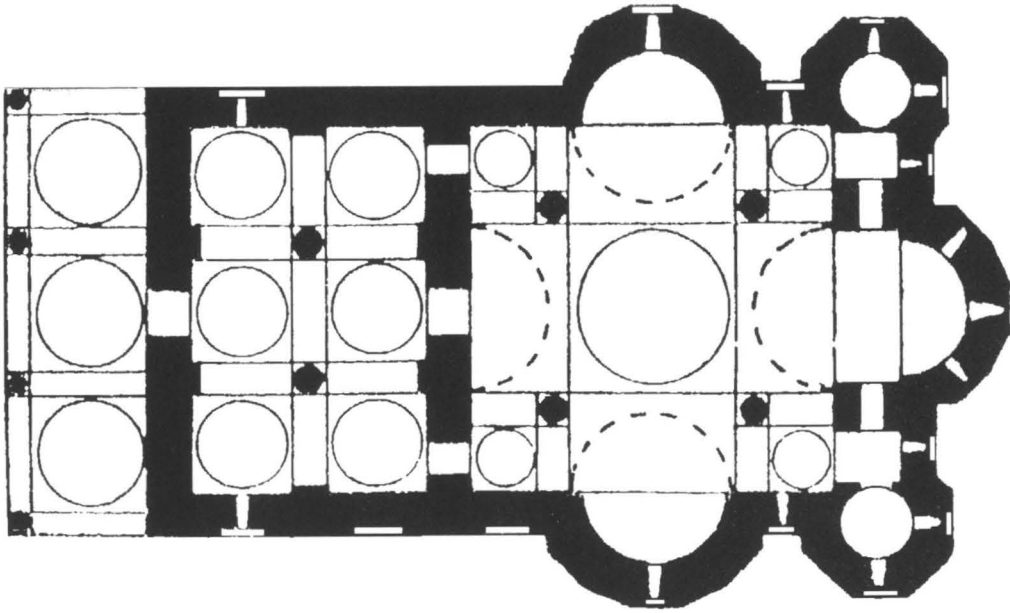
19 More rarely an apse is added to the West arm also, producing a  
quatrefoil plan or tetraconchos (Holy Apostles in Athens, Loukisia in  
Boeotia and churches in Rhodes).

20, 21 Parallel with the traditional inscribed-cross church, another type  
was introduced in the eleventh and twelfth century, in which the dome  
has an octagonal instead of a square base. In this *octagonal* type the



*Fig. 16: Panagia Chalkeon church at Salonica, from the South.*



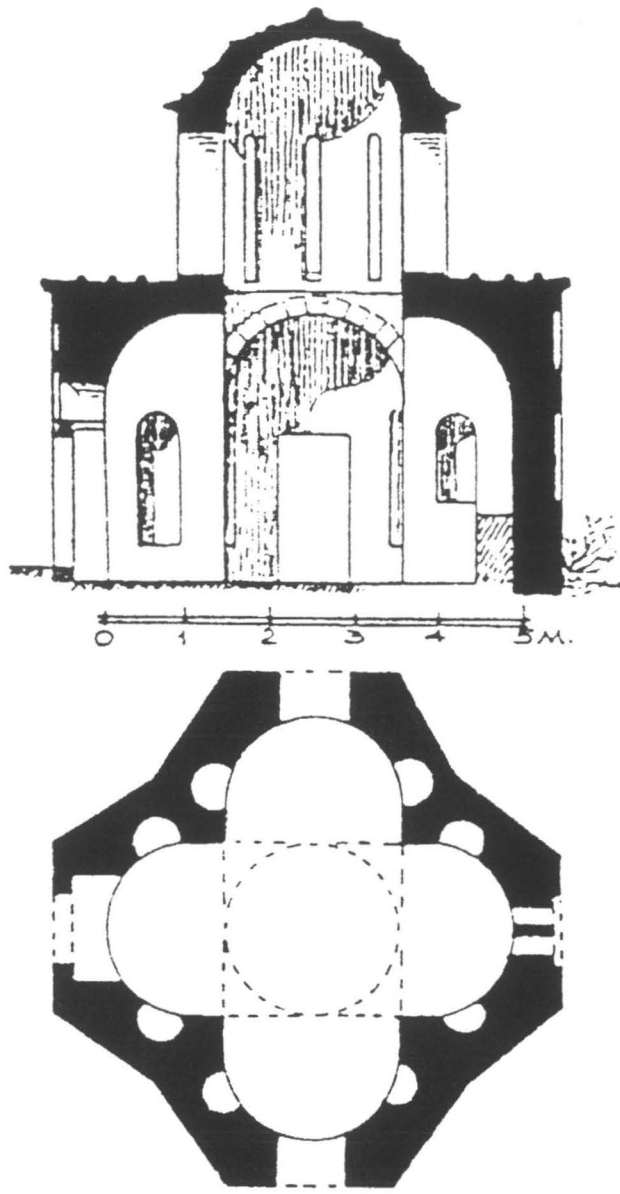


*Fig. 17: Plan of athonite type church, a variant of the inscribed-cross type (Catholicon of Koutloumousiou Monastery).*

*Fig. 18: Catholicon of Megisti Lavra Monastery at Mt. Athos, from the East.*



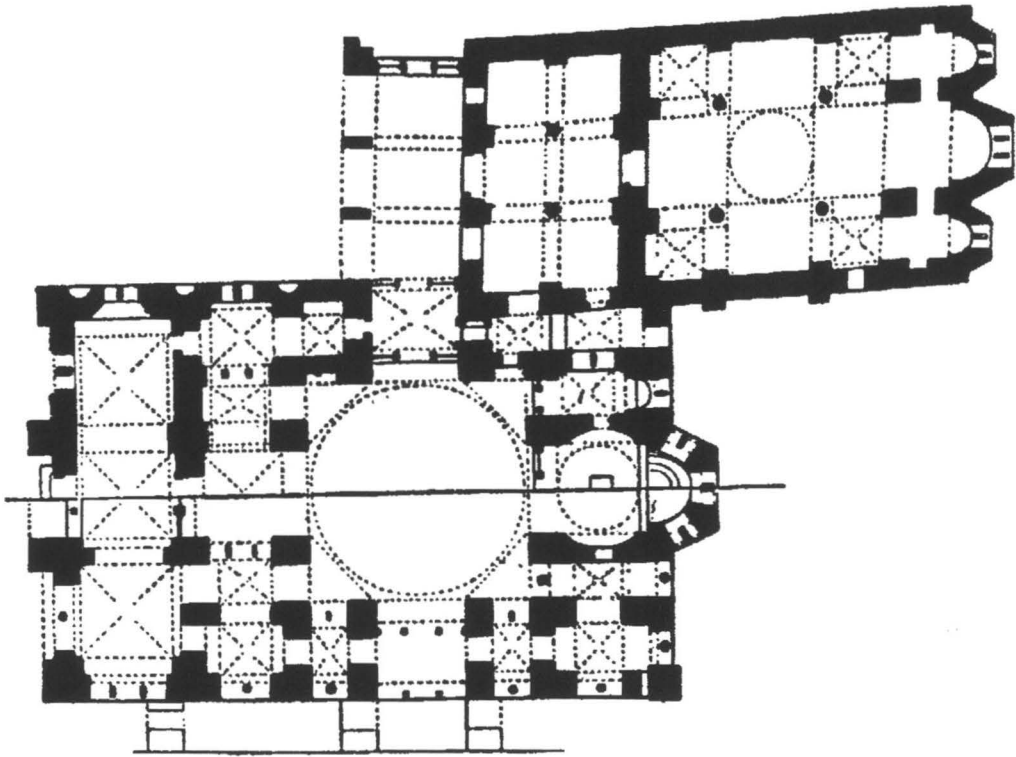




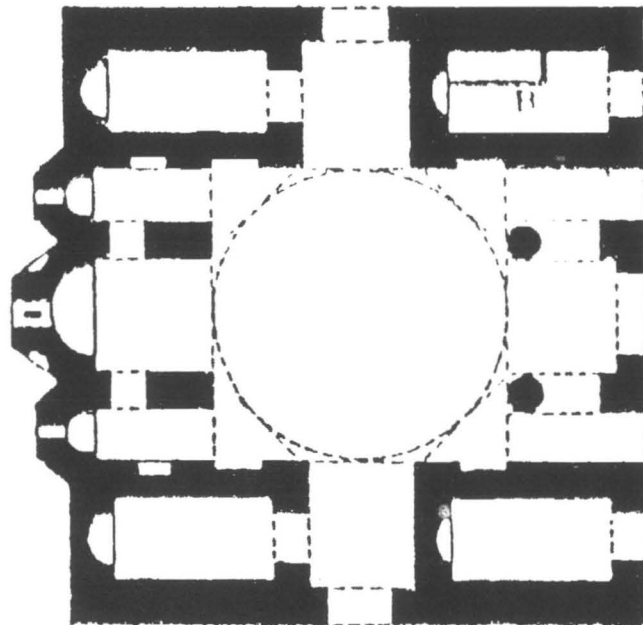
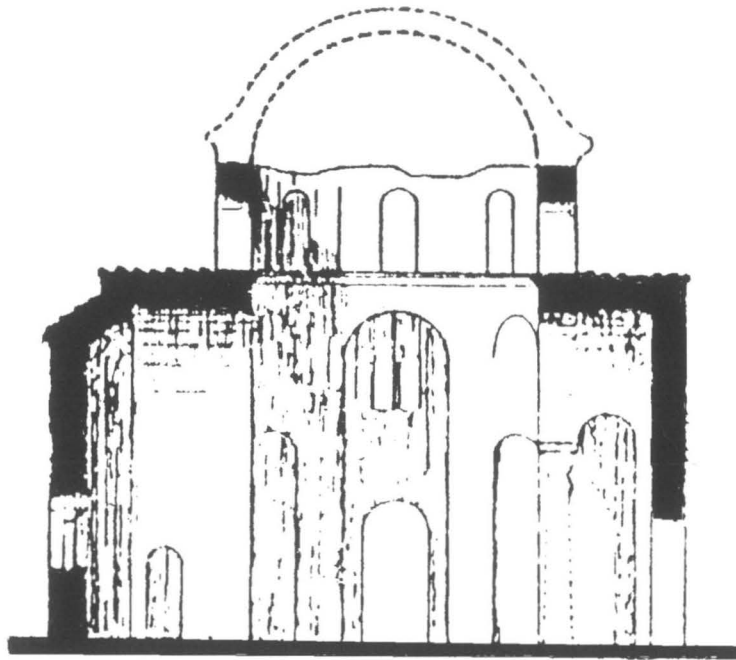
*Fig. 19: Section and plan of four-apsed church at Loukisia, Boeotia.*

interior supports disappear altogether and the dome, greatly enlarged, is carried on the four external walls of the building. The transition from the square plan of these walls to the circular dome is effected by covering the four corners with conch-shaped vaulting, known as *squinces* and probably of Persian origin. Above these and the four conventional arches between them, eight small pendentives close the octagon they form into the circle of the dome.

This solution gives the interior of the church much greater width; so that the representation of Christ Pantocrator in the dome, which, in



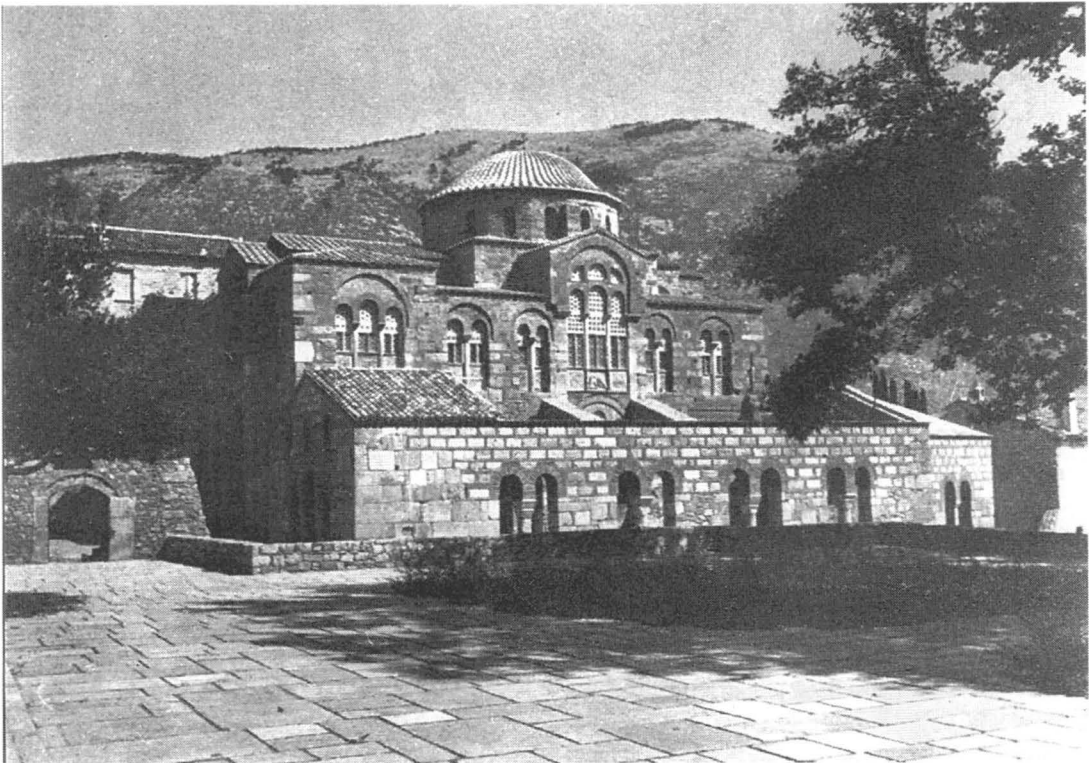
*Fig. 20: Plan of octagonal type church (Catholicon of Hosios Loukas Monastery).*



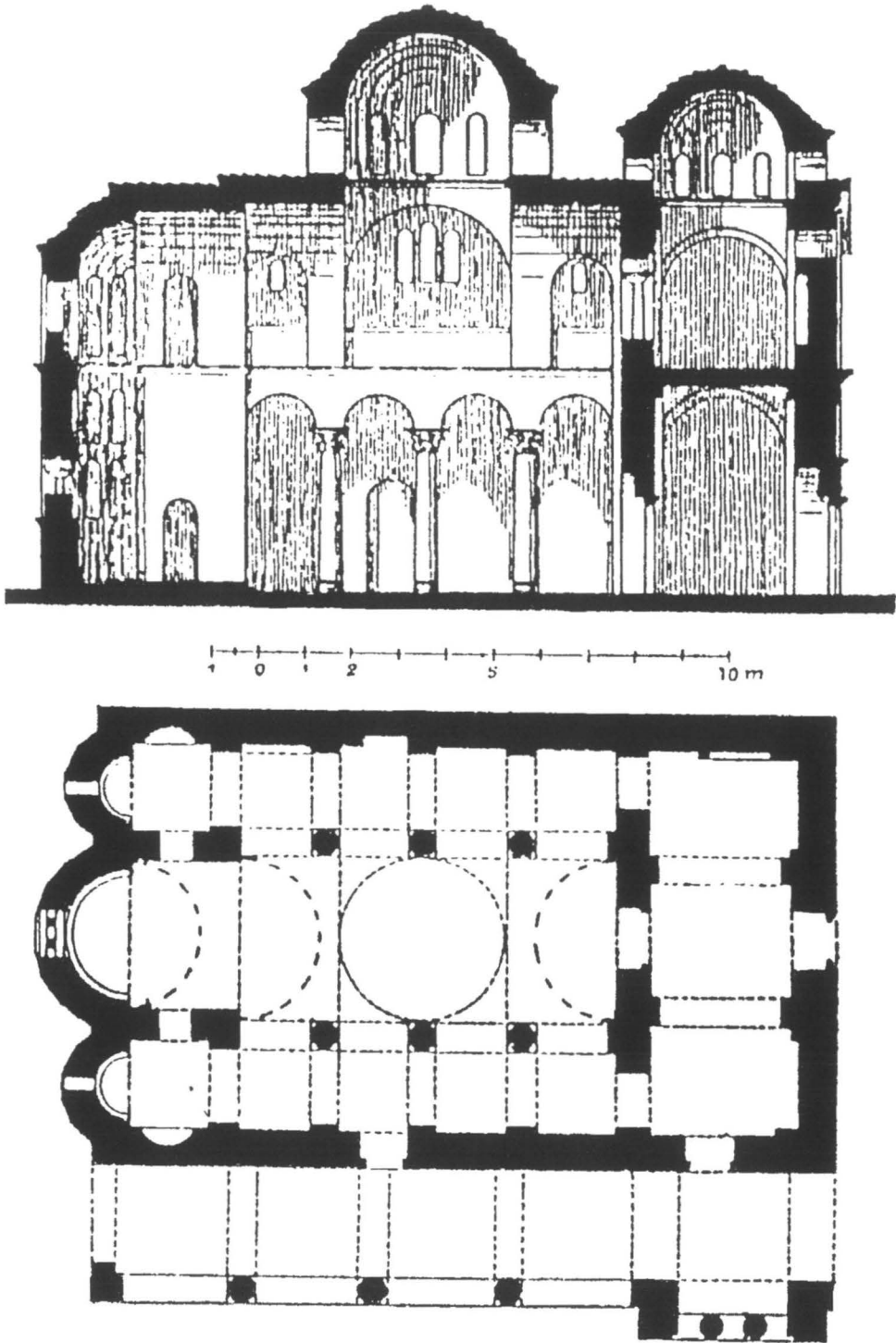
*Fig. 21: Section and plan of octagonal type church (SS. Theodores at Mistra).*

an inscribed-cross church, is visible only from points close to the centre, can be seen immediately one enters through the doors from the narthex. However, the greatly enlarged dome produced proportionally greater thrusts so that the four walls were only just able to sustain them (churches in Chios and Cyprus). Consequently, in several examples the walls were buttressed by the addition outside them of various chapels and extensions which gave the whole building a better proportion to the increased mass of the dome (Soteira Lykodimou in Athens; Daphni; Hosios Loukas; St. Sophia at Monemvasia; SS. Theodoros at Mistra; Christianou in Triphylia; and Paregoritissa at Arta).

22



*Fig. 22: Catholicicon of Hosios Loukas Monastery, from the South-West.*



*Fig. 23: Section and plan of mixed style church: basilica and inscribed-cross (Pantanassa at Mistra).*

One more type of church, introduced in the last centuries before the fall of Constantinople, was a vertical combination of the basilica and the inscribed-cross type: a basilica at ground level with vaulted galleries and dome. This type is found repeatedly at Mistra (Aphentiko, Metropolis and Pantanassa) and also in Paros (St. Nicholas).

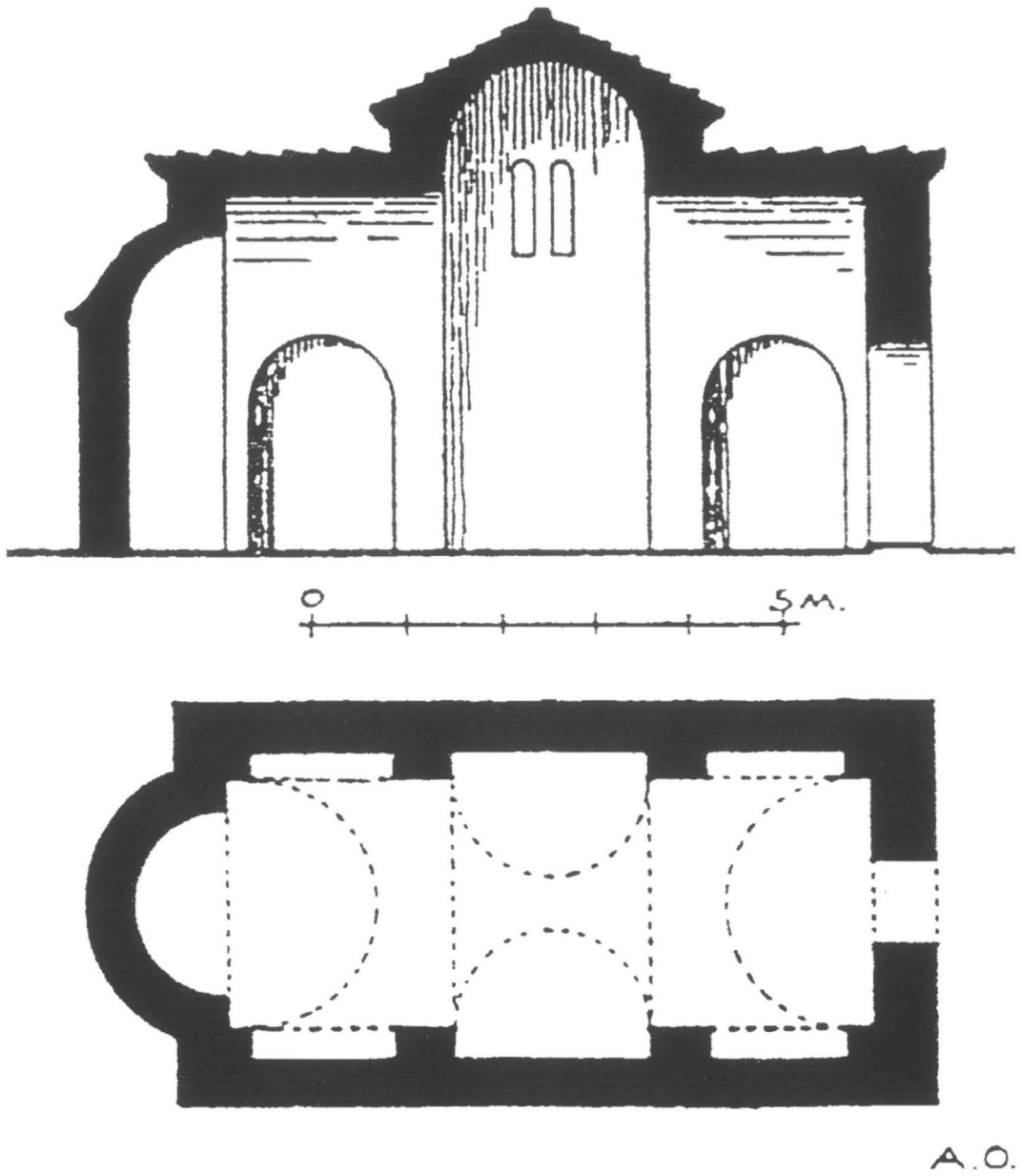
23, 24

In concluding this enumeration of types, reference must also be made to the *transverse-vault church*. This is a basilica, sometimes of one

25



Fig. 24: Church of Hodegetria (Aphentiko) at Mistra, from the North-East.



*Fig. 25: Section and plan of transverse-vault church (SS. Theodores in Argolis).*





*Fig. 26: Church of St. Demetrios at Avlonari, Euboia, from the South-East.*

aisle and sometimes three-aisled, roofed by a vault on the long axis which is interrupted a little before the sanctuary by a narrow bay which rises to a greater height and is roofed by a transverse vault running at right angles to the line of the main vault, forming a cross, the arms of which do not intersect. The transverse-vault churches were common from the thirteenth century and the type was often used, as was the inscribed-cross church, during the Turkish period.

26

The above review of the architectural types employed for Orthodox churches discloses not only their great variety but also their continuous and steady development as regards building practice as well as in respect of scale and appearance, during a period of a thousand years (400-1453).

From the heavy, rectilinear and large-scale Early Christian basilica, whose austere and unpretentious exterior contrasts with its sumptuous interior – an expression of the strong disposition of the Christians of the first six centuries to “turn to the things within” – we have reached by means of a gradual development the picturesque Byzantine church of later times. This was composed on the human scale, more conscious of external appearances in the employment of decorative brick treatments and occasional reliefs, but always with restraint. In all this it expressed the complex but unsettled condition of society during the later centuries of Byzantium.

**Sources of illustrations:**

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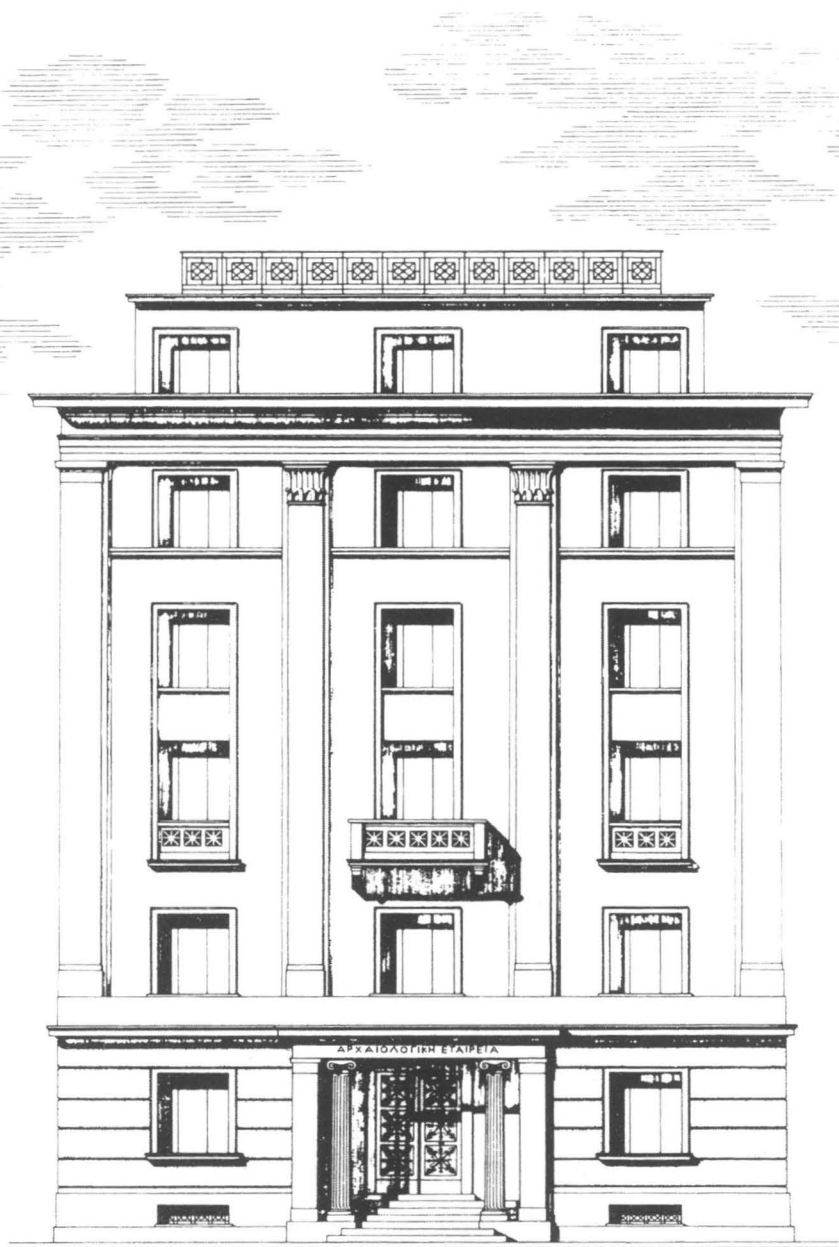
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The Archaeological Society at Athens: 14.

N. Zias: 18.

N. Georgiadis: 24.

D. Konstantios: 26.



## The Archaeological Society at Athens

When the state of Greece was founded in 1830, after the War of Independence, the first governments were immediately faced with the great problems of the economy, public administration and education. The last of these also included the question of the country's ancient treasures, which had been looted and destroyed over the centuries by traffickers in antiquities. However, the official Antiquities Service was undermanned and incapable of taking proper care of the ancient remains, and so on 6th January 1837, on the initiative of a wealthy merchant named Konstantinos Belios, a group of scholars and politicians founded *The Archaeological Society at Athens* with the objects of locating, re-erecting and restoring the antiquities of Greece.

The Presidents and Secretaries of the Society in its early days were politicians and diplomats, whose enthusiasm was such that in spite of the shortage of funds — for it was financed entirely by members' subscriptions and voluntary donations and received no assistance whatever from the State — they were able to carry out a number of ambitious projects such as the excavation of the Acropolis, the restoration of the Parthenon and excavations of the Theatre of Dionysos, the Odeion of Herodes Atticus and the Tower of the Winds, all in Athens.

Until 1859 the Society was in such a precarious financial position that it was constantly on the verge of collapse. In that year the distinguished scholar and epigraphist Stephanos Kumanudes became its Secretary, and he held the position until 1894. With his expertise, his methodical mind and his energy he

breathed new life into the Society, and on his initiative large-scale excavations were carried out in Athens (the Kerameikos, the Acropolis, Hadrian's Library, the Stoa of Attalos, the Theatre of Dionysos, the Roman Agora), elsewhere in Attica (Rhamnous, Thorikos, Marathon, Eleusis, the Amphiaraeion, Piraeus), and in Boeotia (Chaironeia, Tanagra, Thespiai), the Peloponnese (Mycenae, Epidauros, Lakonia) and the Cyclades. Meanwhile the Society founded several large museums in Athens, which were later amalgamated to form the National Archaeological Museum.

Kumanudes was succeeded by Panayiotis Kavvadias, the General Inspector of Antiquities (1895-1909, 1912-1920), who carried on his predecessor's work with undiminished energy and presided over excavations in other parts of Greece — Thessaly, Epiros, Macedonia and the islands (Euboea, Corfu, Kefallinia, Lesbos, Samos and the Cyclades) — as well as the opening of numerous museums in provincial towns. Kavvadias was succeeded by three university professors, Georgios Oikonomos (1924-1951), Anastasios Orlandos (1951-1979) and Georgios Mylonas (1979-1988). Under them the Society managed to keep up its archaeological activities in spite of the difficulties caused by the Second World War and its aftermath, which hampered its work for a considerable length of time.

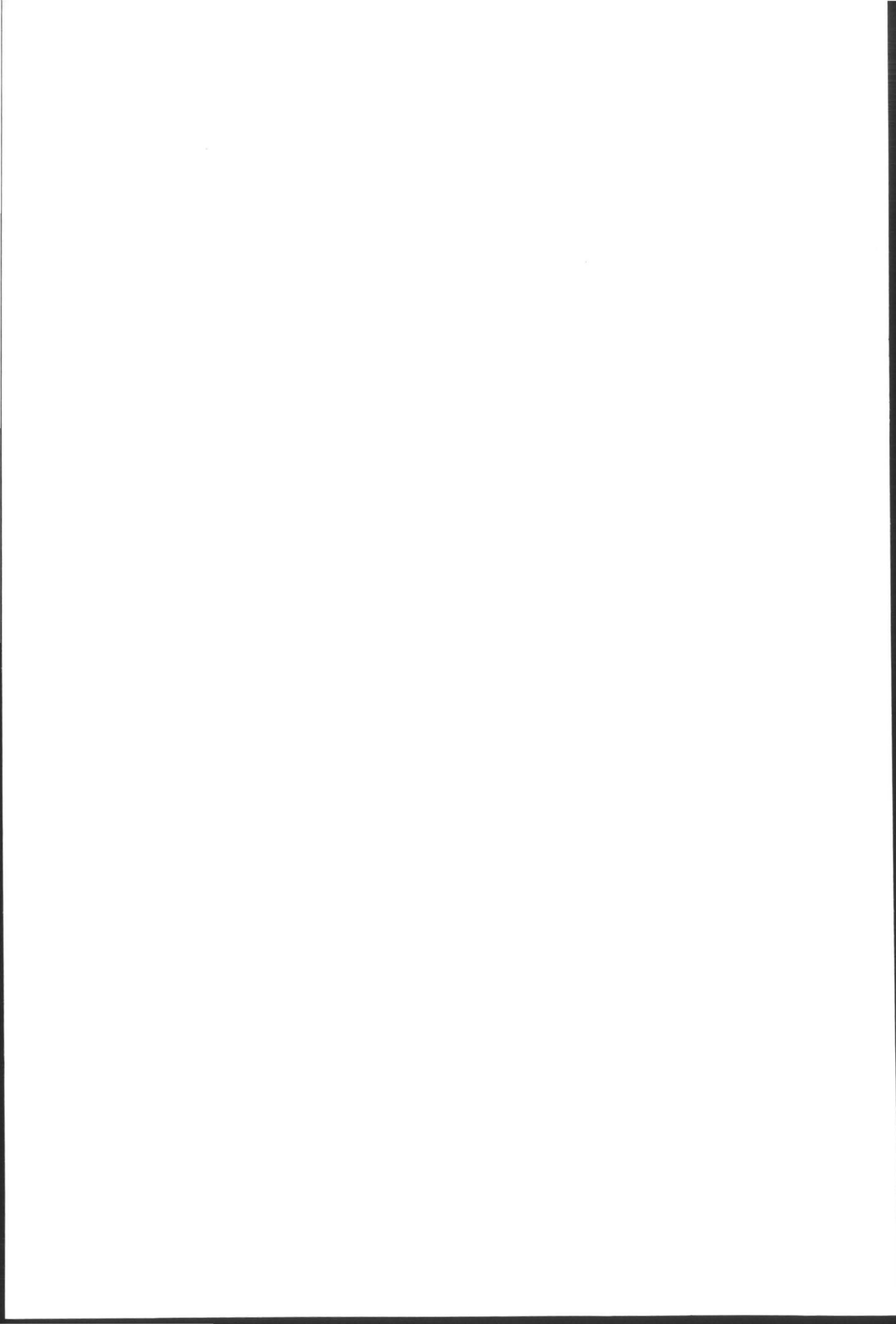
As an independent learned society, the Archaeological Society is in a position to assist the State in its work of protecting, improving and studying Greek antiquities. Whenever necessary, it undertakes the management and execution of large projects: this has happened with the excavations in Macedonia and Thrace in recent years and with the large-scale restoration projects in the past.

An important part of the Society's work is its publishing. It

brings out three annual titles: *Praktika tes Archaiologikes Hetairias* (*Proceedings of the Archaeological Society*) (since 1837) containing detailed reports on the excavations and researches carried out in all parts of Greece; the *Archaiologike Ephemeris* (since 1837) containing papers on subjects to do with Greek antiquities, including excavation reports; and *Ergon tes Archaiologikes Hetairias* (*The Work of the Archaeological Society*) (since 1955), published every May, with brief reports on its excavations. *Mentor* is a quarterly whose contents consist mainly of short articles on ancient Greece and the history of Greek archaeology, as well as news of the Society's activities. All these are edited by the Secretary General.

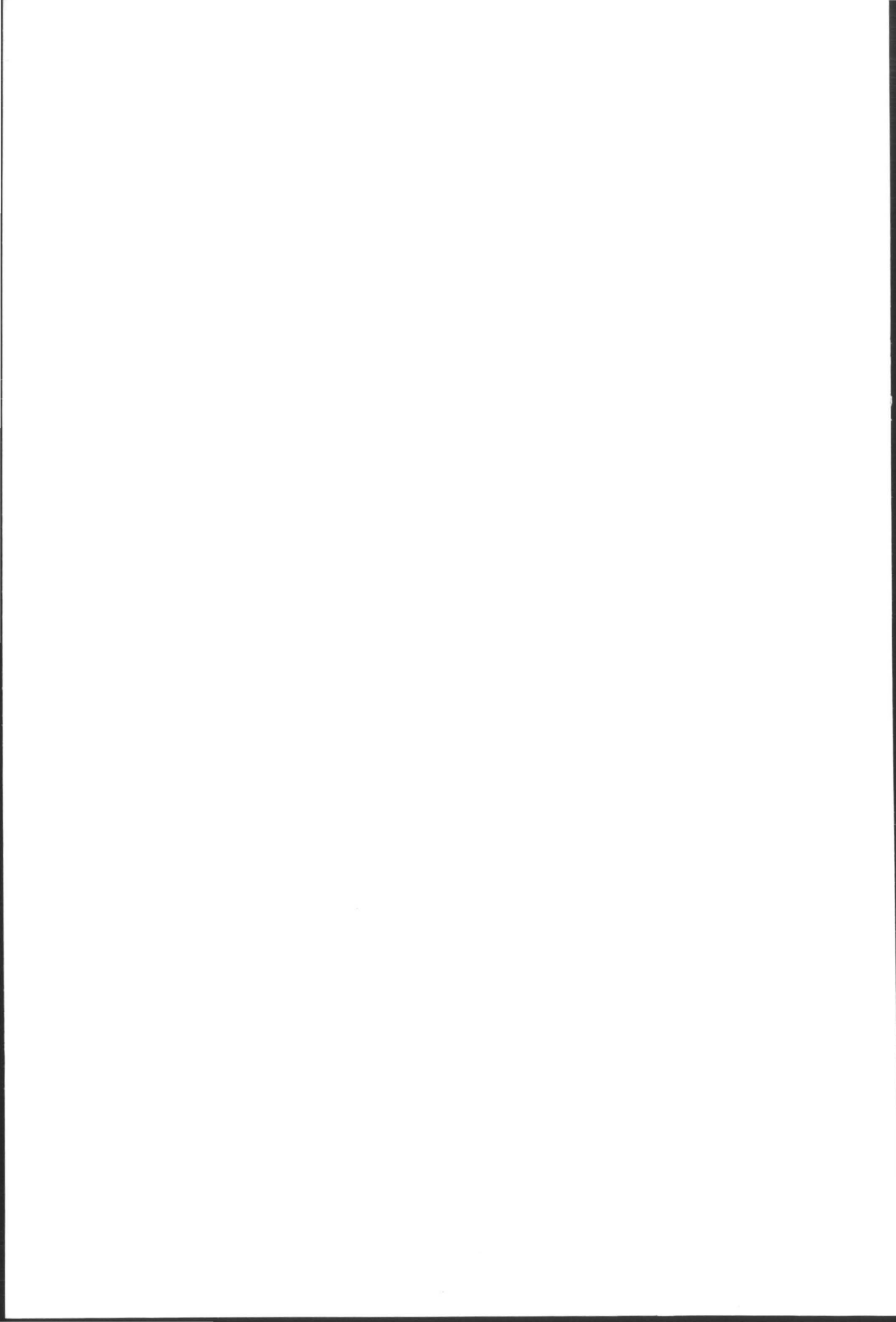
Besides the periodicals, there is the series of books with the general title *The Archaeological Society at Athens Library*: these are monographs on archaeological subjects and reports on excavations, mostly those carried out by the Society.

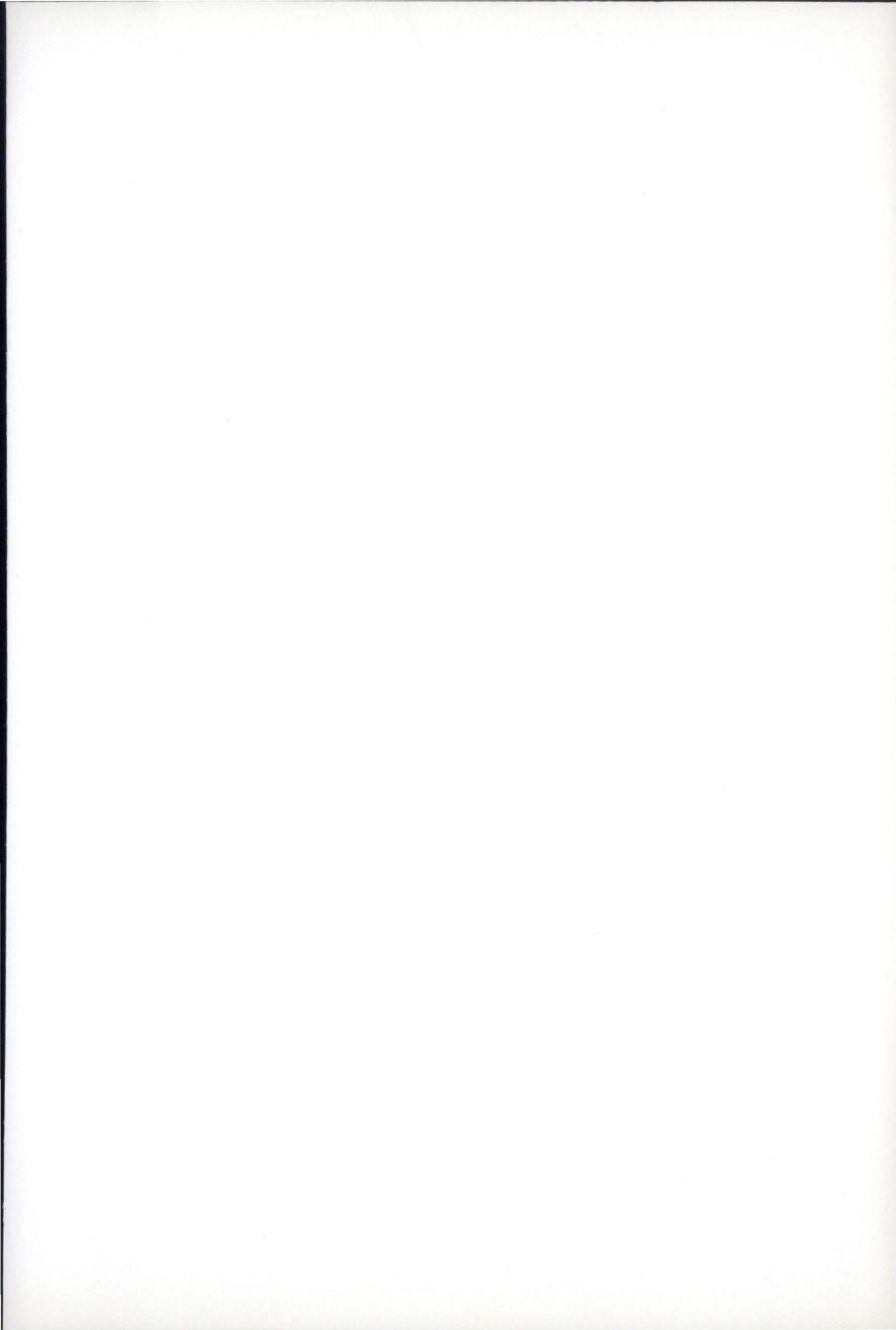
The Society is administered by an eleven-member Board, elected every three years by the members in General Meeting. Every year, in May or thereabouts, the Secretary General of the Board reports on the Society's activities over the past twelve months at a Public Meeting.





THE BOOK  
*BYZANTINE ARCHITECTURE*  
BY ANASTASIOS K. ORLANDOS  
THE ARCHAEOLOGICAL SOCIETY AT ATHENS  
LIBRARY No. 162  
WAS PRINTED IN 1998  
BY "GRAPHIKES TECHNES  
E. BOULOUKOS - A. LOGOTHETIS O.E."  
MILONOS 26, ATHENS.







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(23 December 1887 – 6 October 1979)

Council member of the Archaeological Society (1927–1951) and secretary (1951–1979). Born in Athens, a descendant of I. Orlandos, President of the Parliament during the Greek War of Independence. Studied Architecture (1908) and Classics (1915) in Athens. A student of W. Dörpfeld, G. Karo, R. Heberdey and A. von Premerstein. 1910–1917 served under N. Balanos as architect of the restoration of the ancient monuments on the Acropolis; 1920–1942 director of restoration of the ancient monuments of Greece (excluding the Acropolis); 1942–1958 director of restoration of the ancient and historical monuments of Greece; 1919–1940 Professor of Architectural Form and Order at the Polytechnion; 1943–1958 Professor of the History of Architecture at the Polytechnion; 1939–1958 Professor of Byzantine Archaeology at the University of Athens. A founder member of the Academy of Athens, he served as president in 1950 and as general secretary of the Academy from 1956 to 1966. On his work see *Ἀναστάσιος Κ. Ὀρλάνδος, ὁ ἄνθρωπος καὶ τὸ ἔργον του*, publ. Academy of Athens (1978).



ISSN 1105-7785

ISBN 960-7036-64-6