Arts, Crafts and Trades in Ancient and Byzantine Thessaloniki

Archaeological, Literary and Epigraphic Evidence

Anastassios Ch. Antonaras



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Anastassios Ch. Antonaras

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Foreword

Hinter den Mauern und auf dem offenen Land: Neue Forschungen zum Leben im Byzantinischen Reich (*Behind the Walls and in the Countryside: New Research on Everyday Life in the Byzantine Empire*). This was the title of a symposium held by the *Byzantinische Archäologie Mainz* (*Byzantine Archaeology Mainz*, now *Leibniz-WissenschaftsCampus Mainz: Byzanz zwischen Orient und Okzident*) in June 2010 in Mainz, Germany. The author of this book, Dr Anastassios Antonaras, a leading scholar in his field working at the Museum for Byzantine Culture in Thessaloniki, gave a paper with the title *Artisanal Production in Byzantine Thessaloniki (4th–15th Centuries)*. He presented an impressive amount of evidence for workshops of all kinds in this Byzantine metropolis. The ephorates in charge of the conservation of monuments and archaeological finds had collected much evidence that came to light during building works in the city, which is preserved in the archives. Dr Antonaras compiled all the available evidence and analysed it for the symposium. Afterwards, he said to me that he had never had to put so much effort into such a short paper and that his desk had been overloaded with written records and files he had found during his research. I immediately asked him whether this could be turned into a book that could provide a unique insight into the arts, crafts and trades in Byzantium, their spatial organisation and development throughout the history of the city. He agreed and started working on the manuscript.

This book is the result, and it exceeds expectations: hundreds of archaeological finds from different areas and periods are gathered in a comprehensive catalogue that gives evidence of the city's provision with artisanal products, the craftsmen's quarters and important changes over the centuries. Thessaloniki, the second city in the Byzantine Empire with a long history from the Hellenistic age until today, provides a particularly good case study since this evidence is not available from the capital, Constantinople, itself. Thanks to the efficient ephorates overseeing all excavations comprehensively, this evidence is available in the archives and published archaeological reports.

The present volume would not have been possible without the thorough and attentive work of the editors: Dr Antje Bosselmann-Ruickbie is an art historian and archaeologist specialising in Byzantine goldsmiths' works; Dr Leo Ruickbie, a native English speaker, is a sociologist and historian; and both have a comprehensive publishing and editing record. To them a cordial »thank you«. This also goes for all colleagues in and outside of the Römisch-Germanisches Zentralmuseum Mainz who have helped this book to see the light of the day. I am confident that it is a long-awaited contribution to research on Byzantine everyday life and will be well-received in its field.

Falko Daim

General Director of the Römisch-Germanisches Zentralmuseum
Spokesman of the *Leibniz-WissenschaftsCampus Mainz: Byzanz zwischen Orient und Okzident*

Preface

The core of the present work was undertaken as part of the preparation for a talk given at the international conference *Hinter den Mauern und auf dem offenen Land: Neue Forschungen zum Leben im Byzantinischen Reich* (3-6 June 2010), organised by Falko Daim and Jörg Drauschke (Byzantinische Archäologie Mainz), to whom I extend my warm thanks for the invitation. This was the trigger that made me try to put in order all this information with which I have been struggling, on and off, since the early 1990s. At this time, I participated in the salvage excavations conducted by the Ephorate of Byzantine Antiquities of Thessaloniki and I was trying to place the fragmentary finds from small plots in an historical and urban context. This research continued some years later when I participated in the preparation of an exhibition of the Museum of Byzantine Culture at the White Tower, Thessaloniki. In this exhibition, different aspects of life in Thessaloniki during its 2,300-year history were presented and consequently required study and assessment, thoroughly and diachronically, up until the twentieth century[1].

However, the overall outcome of this book rests upon the work of generations of archaeologists engaged during the twentieth century in the laborious work of salvage excavations in this populous, thriving and ever-growing city. Due to their nature, salvage excavations almost always only offer a glimpse of the different layers of the history that is buried in every corner of Thessaloniki. To these colleagues, past and present, I offer this book in gratitude for their involvement with the archaeology of the city and especially in discovering and identifying artisanal activity.

The artisanal remains are usually the least well-preserved and present the greatest difficulty in being identified properly or even discovered in the first place. I have tried to organise these fragmentary finds, along with what few references have survived, in order to make the material accessible and thus useful to other researchers. I have in my mind especially those researchers who have not personally worked in Thessaloniki, those who do not have access to the archives of the Archaeological Service and those to whom Greek, in which most of the information is written, presents an obstacle.

I would like to thank the following institutions for their permission to publish hitherto unpublished archaeological information, together with the relevant photographs and drawings: the Ephorate of Antiquities of the City of Thessaloniki, which incorporates parts of the former 16th Ephorate of Prehistoric and Classical Antiquities and the 9th Ephorate of Byzantine and Post-Byzantine Antiquities; the Museum of Byzantine Culture; and the Archaeological Museum of Thessaloniki. In addition, I would like to thank the following people: Professor Dr Falko Daim and Dr Jörg Drauschke for their enthusiasm for the book and their decision to include it in the publication series of the *Leibniz-WissenschaftsCampus Mainz: Byzanz zwischen Orient und Okzident*; Dr Antje Bosselmann-Ruickbie and Dr Leo Ruickbie for text-editing, proof-reading and linguistic improvement of the text, as well as useful remarks and notes on the contents; Dr Reinhard Köster and Dr Claudia Nickel of the RGZM publishing house for their great support; and Franz Siegmeth for graphic design and artwork.

Apart from the names of historical persons, which appear in the standard form known in the English language, all names of streets, cities, sites, monuments and proper names, as well as Greek names of authors and the abbreviations of Greek titles in the bibliography are transliterated according to the standardised system of Romanisation of Greek employed by the American Library Association and the United States' Library of Congress (ALA LC) (http://www.loc.gov/catdir/cpso/romanization/greek.pdf).

Anastassios Ch. Antonaras
Thessaloniki 2016

1 All information, texts and photos of the exhibition can be accessed online at http://www.lpth.gr.

Introduction

Through technology humankind has tried to control its natural environment and create more favourable living conditions. The topic of this present work is that section of society that dealt with technology: the artisans and their working places. The practical implementation of technology in every aspect of the everyday life of Thessalonians and Byzantines in general will be presented here through historical testimonies and archaeological finds connected to these artisans and their professional activities in Thessaloniki. These activities, generally speaking, are often under-represented, if not neglected, in the excavation reports. In addition, historians have only occasionally dealt with this topic and mostly not in conjunction with the archaeological evidence. Thessaloniki is no exception, despite its size and importance, and the great number of salvage excavations conducted in it. Work to date has mostly been in the form of micro-studies dealing with a specific time period and a single material, e. g. Hellenistic coroplastic, Roman sculpture, Early Christian glassworking, or Late Byzantine glazed pottery. This can be seen clearly in the bibliography of the present volume. It has not been attempted until now to analyse and describe the general picture presented in the entirety of the archaeological and historical evidence for the total historical period. This is especially so in respect of attempting, at the same time, to illuminate the social status of these professionals and their spatial incorporation in the urban fabric of each period. Even less attempt has been made to investigate diachronically the functioning of this large Mediterranean urban and commercial centre[2].

The time-frame of this work spans from the founding of Thessaloniki in 316/315 BC to its final conquest by the Ottomans on 29 March 1430. The Ottoman conquest is significant because it marked the decrease in the city's population as many of its Christian inhabitants, both locals and Westerners, fled and the majority of those remaining were sold into slavery. Jewish merchants and artisans were shortly afterwards compelled to move to Constantinople. The city became so deserted that its new overlords were forced to import Thessalonian families from the surrounding region, as well as Yuruks from nearby Giannitsa, in order to re-populate the city. This signalled an interruption in the continuity of everyday life, certainly in the operation of workshops, and possibly also in the expertise connected with their operation. Indeed, the arrival of a large number of Sephardic Spanish Jews from the late fifteenth century onwards, as well as Ashkenazi Jews from central Europe, altered the city drastically. Its commerce, arts, crafts and trades, even its technology, permanently changed in respect to the preceding periods[3].

The geographic context and backdrop for the present volume is the city itself, as delimited by its walls and the areas in direct contact with these to the east and west, where the city's skilled workers were active. The mills located along streams north of the city have also been included as these formed an integral part of the productive activity that met the needs of the city itself. In addition, a gold mine in the hills above the valley to the east of the city that clearly belonged to the Metropolis of Thessaloniki has also been included. The gold from this mine ended up as raw material for the city's workshops.

Artisanal activity in Thessaloniki will be approached through the study of extant archaeological remains and historical records. To that end, all published reports and notes in archaeological and historical journals referring to the excavations conducted in the city or to incidental finds during public works were examined. In addition, thorough research was conducted in the archives of the local Ephorates of the Archaeological Service in order to compile a detailed catalogue of all sites ecavated from the beginning of the twentieth century until 2014 in the city and its immediate hinterland providing indications of artisanal activities. Furthermore, personal interviews with colleagues who have served in the Archaeological Service have supplemented the research with extra information and shed light on some vaguely mentioned excavations and defined the exact location of some other plots. Finally, the collections of the Archaeological Museum of Thessaloniki and the Museum of Byzantine Culture were scrutinised for wasters and other finds indicative of artisanal activities and their find sites located, thus adding some more dots on the map of the workshops in the city. A detailed catalogue of the workshops was made that forms the core and basis of the entire work. In this catalogue, each workshop is presented comprehensively with full bibliographic references. All the data found concerning its form and function as a

2 The sole exception is Dēmētriadēs, Topographia Thessalonikēs, concerning the Ottoman period.

3 Dēmētriadēs, Topographia Thessalonikēs 23-27, 459-464. – Vryonis Jr., The Ottoman Conquest 281-321. – Melville-Jones, Ottoman Policy 159-169 esp. 168. – Mazower, Thessalonikē 53-59.

workshop, as well as data about previous and subsequent uses at that same point are mentioned, and related drawings and photographs have also been added to these entries. These finds have also been mapped and situated in the city's urban fabric, making visible the various activities by era and region. Naturally, within this context it was absolutely vital to study the space and morphology of the city itself, the locus in which all these individuals lived and worked. The same holds for the monuments, chiefly the walls, the Agora, the *Via Regia* or *Leōphoros* and the other ancient roads preserved down the centuries, all of which defined and continue to define the basic framework of the background against which all these activities took place. Even other monuments such as the Galerian Palace complex and the Christian churches, which defined neighbourhoods and *quartiers*, shaping the micro-framework of the lives and activities of artisans and craftsmen, were sought out and studied in an effort to build a narrative concerning the urban structure, in order to include within it artisanal activities and the various workshops.

Tracing artisanal activities in 2,300-year-old Thessaloniki, as in other cities with a continuous life of so many centuries, is fraught with difficulties. This is true especially concerning artisanal activity in the earliest historical periods of Thessaloniki, which are very obscure and only scarce evidence has been discovered until now. For the very earliest period this identification is almost impossible, at least so far as locating installations or built elements is concerned. Usually the evidence relies on movable archaeological finds, i.e. artefacts, which due to their great numbers or their special character, such as wasters (i.e. deformed and/or unfinished products), present a still indirect yet strong evidence for local artisanal activity. Furthermore, it should be noted that only some of the workshops can be located archaeologically, particularly: a) those related to the processing of organic materials that required extensive use of water and, therefore, had water reservoirs, basins, and systems for inflowing and drainage water, which are often at least partly preserved and thus archaeologically detectible; and b) those related to the processing of inorganic materials for which the use of furnaces was required, remnants of which are also traceable in the excavations.

The fragmentary character of the salvage excavations that unearthed most of the relevant finds, in addition to the constant use of the same space and the consequent disturbances of the archaeological layers, supplemented by the fact that artisanal activities were usually housed in makeshift structures that often left little, if any, traceable remains, makes the identification of such finds extremely difficult, even when far more recent remains are under consideration. Hence, out of 112 artisanal units that have been identified as such in Thessaloniki, for at least nineteen of them (**cat. nos 67, 88-100, 108-112**) it was impossible to associate any particular craft with reasonable certainty.

Furthermore, valuable information on these crafts can be found in the written sources, which directly or indirectly illuminate aspects of private and professional life of the citizens of Thessaloniki[4]. These include inscriptions, historiographical, hagiographical, and legal texts, *acta* of the monasteries of Mount Athos. To this end, all volumes of the Acts of the monasteries of Mount Athos and other monastic archives were thoroughly searched. Acts concerning monastery properties in Thessaloniki were identified and information was extracted about the presence of workshops and commercial premises. Furthermore, the overall technical infrastructure and foundation of the buildings referred to were studied and evaluated to see wherever this could add data about the choice of some materials, indicating either the paucity or absence of some, or the widely and easily accessible presence of others.

The historical sources that mention the city and events that took place in the region were a basic source for the more general framework within which information about workshop activity was integrated. Texts by visitors to Thessaloniki illuminated the city's form and functions from additional viewpoints. Legal texts, especially those mentioning the city within the legal framework governing the establishment and operation of various workshop activities, were an important basis for determining what was theoretically in force according to the law, as well as for checking and assessing the archaeological finds themselves, which testify to compliance with, or more often violation of, this legislative framework.

Commentaries on ancient Greek texts written by Byzantine Thessalonians or others that are considered to accurately reflect daily life, contemporary technology, and the sorts of products in circulation in the city were also used. Theological and literary texts which go beyond the scope of literary conventions (*topoi*) and are considered to contain factual insights into city life were also examined, and they significantly enriched topics related to our own subject. The lives of saints who lived in or passed through Thessaloniki and could offer even minimal information about city life were studied; such information included living conditions in the city, existing technology, and the production, distribution, and trade in goods. Furthermore, the correspondences of prelates were excerpted, including that of both local clerics and others who

4 For information from hagiographical sources about trades and crafts in the sixth and seventh centuries, see Magoulias, Trades and Crafts 11-35. On the use of inscriptions to shed light to the Early Christian craftsmen, see Mentzou, Symvolai passim. – Sodini, L'artisanat urbain à l'époque paléochrétienne 71-119, with further bibliography. On the use of written sources in understanding the multifaceted nature of secular and religious artefacts, and Byzantine material culture in general as well as the conditions and limitations they present in this interpretation with a thorough theoretical discussion and further bibliography, see Parani, On The Personal Life passim esp. 158-167. See also Parani, Reconstructing passim esp. 218-289, for the secular artefacts and the reality of Byzantine material culture represented in Byzantine art and their rendering from an archaeological and art-historial point of view. On the significance of written documents to material culture studies generally and more specifically to the understanding of the Middle and Late Byzantine society, see Parani, Intercultural passim and esp. 349-353 with further bibliography. On the vessel and its metaphorical use in Middle Byzantine literature and the place of the pot in the Byzantine world, see Gerstel, The Sacred Vessel 149-156.

simply mentioned local production of specific products and the commerce in these.

All published and most of the still unpublished inscriptions from the excavations were studied in order to trace all information concerning artisans, their works and their societies and guilds. Finally, the lead seals of church officials and state dignitaries residing in Thessaloniki have been used as well, both as artefacts made in the city and as bearers of historical information by the virtue of the inscriptions stamped on them.

Another consideration was to identify continuity and discontinuity in the operation of the city, and the presence of professionals in sectors who maintained their traditions for centuries throughout Thessaloniki's long history. Finally, there is the diachronicity associated with fluctuations in financial conditions prevailing in the city and its commercial network, and perhaps with the arrival (or not) of new inhabitants having different origins and traditions, and who introduced or enhanced technical expertise and professions.

This book is divided into three major chronological chapters. Firstly, the scant Hellenistic finds along with the more numerous Roman and Early Christian finds are examined in succession, since they present one, albeit wide, ensemble covering Antiquity. Secondly, the Dark Ages and Middle Byzantine (eighth to twelfth centuries) finds are presented. Finally, those from the Latin Kingdom of Thessalonica and the Late Byzantine period (thirteenth to fifteenth centuries) are considered.

Each chapter begins with an outline of the political history of the era in general with a special focus on the events in and around Thessaloniki. A topographical outline of the city follows, presenting how it looked like in that period and the context in which the artisans operated. Further on, information derived from historical sources, in addition to that, excavation finds on each profession or trade that could be documented for that period are presented in detail. Professions are presented in the same order, beginning with those that required the use of fire, followed by those that required the use of substantial quantities of water and closing with those that cannot be traced archaeologically and are only documented indirectly through references in written sources. The archaeological remains of each profession are marked in the large **map** at the end of the book. In additon, separate maps show the find-spots for each profession (**figs 379-386**). Finally, closing remarks are added, discussing briefly the social position of the artisan in Roman and Byzantine society. Finds from Thessaloniki are presented in chronological order with general remarks given on the layout of the workshops and their spatial distribution in the urban plan of the city and its environs.

Following this is a thorough catalogue of the 112 workshops that have been identified through excavation. Workshops of the same trade are arranged in a chronological order and trades are presented in the same order that they were exhibited in the chronological chapters, fire-related, water-related and archaeologically invisible ones[5]. Special effort has been made in order to present all information concerning the excavated lot of each catalogue entry, thus making available all clues about what stood and what was happening on the site before, and therefore whether that affected the installation of the workshop there. It is also noted what happened after the destruction of the workshop and the final departure of the artisan from the site. Each entry is documented with the plan of the excavation, where the remains of the workshop have been specially highlighted, and with photographs of the movable and immovable finds connected with that phase and use. Finally, the work is supplemented by a bibliography of the ancient written sources and the modern books and articles that have been used for this research.

5 Further information on the organisation of the catalogue is given in the introduction to the catalogue in this volume.

Hellenistic to Early Christian Period

Thessaloniki was founded by Cassander, later King of Macedon in 316/315 BC by joining 26 smaller settlements in a strategic position in the Thermaic gulf. It was the most important centre on the Via Egnatia, connecting the trade routes running through the valleys of Morava and Axios, the Danubian area and the Balkan hinterlands with the Aegean Sea and the Mediterranean. The strategic position of the city played a decisive role in its future development. The city experienced a period of steady and constant growth in both its political and economic importance from the Roman conquest in 168 BC until 298/299 AD when it was chosen by Galerius as his capital and the temporary residence of Constantine I before the final selection of Byzantium as his capital[6]. Groups of foreign traders were active in Thessaloniki, extending their activities into the city's hinterland[7], from the late Hellenistic period and during the Roman Imperial period[8]. Characteristic examples presented by the Roman traders (*negotiatores*)[9] organised in communities (*Conventus Civium Romanorum*), the Jewish traders and artisans, known through the Acts of the Apostles[10] and others, mainly from Asia Minor and Levant[11] whose presence in the city escaped oblivion[12] thanks to the epigraphic evidence of funerary inscriptions, such as the *myropōlēs* (μυροπώλης, fragrance seller) Gaios Ostios Eros Insteianos[13].

Theodosius I was the next emperor who resided in the city, during his campaign against the Goths in 380. It was he who most probably ordered the repair of the city's walls. During the Early Byzantine period, Thessaloniki remained one of the larger cities in the eastern Mediterranean with around 100,000 inhabitants, according to some historians[14]. From the late fourth to the seventh centuries, barbarian invasions played a key role in the history of Thessaloniki and Macedonia in general. From the late fourth into the fifth century the invaders were the Goths, from the mid-sixth century they were the Huns, and from the seventh century onwards we see Avar and Slavic invasions. The invaders occasionally laid siege to the city, damaging its economic position and depriving it of the valuable resources of the outlying area. However, the port[15] remained open and operational, providing the city with goods and merchandise from other regions[16].

From its founding by the later King of Macedon Cassander in 316/315 BC, a little after his marriage to Thessaloniki, the daughter of King Philip II, and regardless of its exact size and the part of the area where it was first laid and developed, Thessaloniki was delineated by its walls. These are only partly traced at the north-eastern section of the later walls, while to the south they ran approximately west of the Rotonda. It is still not clear if the original Hellenistic city extended to the seashore, or if it only later expanded to this point, as could be indicated by the distribution of workshops that would be expected to operate outside the city walls to the plain in the

6 Theocharidēs, Istoria Makedonias 17-40. – Spieser, Thessalonique 9-24. – Voutyras, Thessalonikē 102-113. – Vakalopoulos, Istoria Thessalonikēs 15-101. – For a consise presentation of the situation in the area of Thessaloniki before the founding of the city, see Tiverios, Istorikoi chronoi 59-66.

7 On the presence of an association of mule drivers (*collegium mulionum*) during the second century AD in Thessaloniki and the consequent flow of goods from the city to the region and vice versa that their existence suggests, see Nigdelēs, Epigraphika Thessalonikeia 184-188. – Furthermore, the members of an association of *Herō Aulōneitēs* (συνήθια Ἥρωνος Αὐλωνίτου) mentioned in a funerary inscription of 159/160 AD in Thessaloniki, were also connected with wagoners and merchandisers: Terzopoulou, Amaxes 301-302, with all prior bibliography.

8 These foreigners appear to be integrated into Thessalonian society by the late first century BC, or early first century AD, see Nigdelis, Voluntary Associations passim esp. 21.

9 Rizakēs, Koinotēta sympragmateuomenōn Rōmaiōn 511-521. – Velenēs, Sympragmateuomenoi Rōmaioi 8-15. – Generally, on religious and professional associations in Thessaloniki and the role they played in forging collective identities among the middle and lower classes in a city dominated by an aristocratic minority, see Nigdelis, Voluntary Associations 13-47.

10 Acts 17:1-10: »Διοδεύσαντες δὲ τὴν Ἀμφίπολιν καὶ τὴν Ἀπολλωνίαν ἦλθον εἰς Θεσσαλονίκην, ὅπου ἦν συναγωγὴ τῶν Ἰουδαίων« [When they had passed through Amphipolis and Apollonia, they came to Thessaloniki, where there was a Jewish synagogue]. It appears that the main body of Jews had arrived in Thessaloniki in the second century BC, probably from Alexandria. – On Jews in the area, see Nigdelis, Synagoge(n) und Gemeinde 297-306. – An overview, mainly based on Nigdelis, Synagoge(n) und Gemeinden, with newer bibliography on the same matter is presented in Meletsē, Parousia Evraiōn 84-91.

11 Nigdelēs, Habent sua fata lapides 95-100.

12 On references to artists and artisans and their position in society in Early Christian legal and hagiological texts, where only their works are occasionally appreciated and never the artisans as individuals, see Asēmakopoulou-Atzaka, Mneies kallitechnōn kai technitōn 291-311.

13 I thank Prof. P. Nigdelēs for discussions on this matter and help with the bibliography concerning Thessalonian inscriptions and the Roman history of the city. – Furthermore, on G. O. Eros, see Misailidou-Despotidou, Epigraphes Makedonias 73 no. 72. – Nigdelēs, Epigraphika Thessalonikeia 163-167, where the inscription is dated to the second half of the second century AD. – See ibid. 219-224, for another myropolis named Chrēsimos (Χρήσιμος) also from the second half of the second century AD; an apparently quite successful entrepreneur who could afford a marble sarcophagus for himself, his wife Chryseis and their children Chrēsimē, Chryseis and Chrēsimos. – On other foreigners in Thessaloniki, especially from Asia Minor, see Robert, Les inscriptions de Thessalonique 242-243.

14 Laiou/Morrisson, The Byzantine Economy 26, with bibliography.

15 For a detailed overview of the history of the port of Thessaloniki from the fourth to the sixteenth centuries, see Malamut/Grélois, Le port de Thessalonique 131-146.

16 For a general overview, see Tsitouridou, Palaiochristianikē technē 224-249. – Christophilopoulou, Politikē istoria 250-257. – Eadem, Politikes exelixeis 258-263.

south and the coastal region[17]. In any case, it is evident that already in the second century BC, the city possessed organised port facilities[18].

Urban Planning

The city was laid out on a rectangular grid, the Hippodameian system, which is still visible in the modern city and is especially obvious in the orientation of Roman and Hellenistic ruins[19]. The streets of Thessaloniki formed rectangular quarters (*insulae*), 102 m long N-S and 58.5 m E-W, including the streets that surrounded them[20]. This plan was preserved to a great extent until the twentieth century. Main roads are still visible today, such as the *Decumanus Maximus*, known as the *Via Regia*[21], i.e. modern Egnatia Street, stretching on an E-W axis and its parallels to the north (*decumani*), as well as several streets (*cardines*) vertical to them. These marble-paved streets, or at least some of the more important among them, had covered pavements, porticoed *stoas* (*viae colonnatae*) and large vaulted sewers underneath. It is probable that they were also widened in the Roman period. The *Decumanus* corresponding to the modern Agiou Dēmētriou Street had three-metre-wide porticoes, supported by massive pilasters, just like the *cardo* that intersected it (modern Paster Street)[22]. The most central street, the *Via Regia* was a marble-paved *via colonnata* five metres wide, with five-metre-wide pavements. It traversed the city from the Chrysē Gate in the west, which from the second half of the first century BC was accentuated by a triumphal arch decorated with elaborate reliefs[23], to the Cassandra Gate in the east. Another important street, with E-W orientation, corresponding with modern Agiou Dēmētriou Street, stretched between the Lētē Gate and the New Chrysē Gate. It has recently been proposed that at least two monumental columns with statues of emperors on high pilaster-like pedestals were placed along this street[24]. Furthermore, between these two main streets, two more ancient streets are preserved, being today Olympou and Filippou Streets[25]. Also, modern Venizelou Street stands out among the several preserved ancient *cardines,* vertical to those aforementioned streets. It was three metres wide and lined with column-supported porticoes/*stoas*. At its junction with the *Via Regia* there stood a monumental *tetrapylon*, which remained in use even after the end of Antiquity, into the Dark Ages, and probably up until the ninetee nth century[26].

Sanctuaries

In the west part of the city, north of the *Via Regia*, were the sanctuaries. In that area, in nearby Dioikētēriou Street, a Hellenistic *Sarapeion* was traced, which remained in use for many centuries. Several extant inscriptions referring to other temples and sanctuaries prove their presence in the city[27]. In the early Imperial period, several works were undertaken connected with the introduction of the Imperial cult in the west part of the city, in the area of the sanctuaries and north of the *Sarapeion*. There, statues of the emperors embellished an unidentified building in modern Stratēgou Doumpiōtē Street. Also, a large fifth-century BC Ionic temple was translocated, probably from Aineia at the junction of Krystallē and Dioikētēriou Street, possibly to house the new Imperial cult[28]. The Serapeion continued to thrive during the late Imperial period and it seems that it comprised an extended complex in which several, mainly oriental, deities were worshipped[29]. Finally, votive pits with clay figurines indicate the existence of a temple devoted probably to the nymphs, or rather a *thesmophorion*, dated to the third century BC and also to the second to the fourth centuries AD, were identified at 35 and 39 Mousōn Street[30].

Public Buildings

There are scarce written sources and few uncontested archaeological finds elucidating the history of the city's public buildings in this period. It is known that in the first century BC Thessaloniki had a *Gymnasion*, probably situated close to the area of the later Roman Agora[31]. Also, according to a 60 BC inscription found at Olympou Street, a monumental agora existed at that time, probably situated near the site of the Roman Agora, but apparently not at the exact same place, since it has not been found in the detailed excavations conducted in the area of the Agora[32].

A public bath operated until the end of the first century AD in the south-eastern corner of the area covered later by the Roman Agora, while the eastern part of that same area

17 Vitti, Poleodomikē exelixē 41, 121-122. – Velenis, Ta teichē 19, 63, who believes that the city was originally farther from the shore. – For a more recent study on the matter with an overview of the older arguments, incorporating the evidence from excavations conducted in recent years, see Markē, Chōrothetēsē passim.

18 Livius, Ab urbe condita XLIV 10, noted that in 169 BC, Perseas burned down the shipyard when the Romans reached Heracleion in Pieria. Vitti, Poleodomikē exelixē 131-133, with thorough bibliography.

19 Vitti, Poleodomikē exelixē 55. – Markē, Chōrothetēsē 94, with information on the excavations of four plots.

20 Vitti, Poleodomikē exelixē 75, 141

21 Livius, Ab urbe condita XXXIX 27.10. – Vitti, Poleodomikē exelixē 68-69.

22 Karydas, Anaskaphes Paster 309-320, especially on the porticoes of the streets, 316-317 fig. 6. – Markē, Sōstikes anaskaphes 208-209.

23 Spieser, Thessalonique 55-56, 62. – Vitti, Poleodomikē exelixē 57, 170-171 fig. 10.

24 Stephanidou-Tiveriou, Yilan Mermer

25 Vitti, Poleodomikē exelixē 67-86.

26 On streets and porticoes in Early Byzantine cities in general, see Sarandi, The Byzantine City 259-294. – On colonnaded streets (*viae colonnatae*) and Thessaloniki, see Vitti, Poleodomikē exelixē 151-152, with all older bibliography. – Karydas, Anaskaphes Paster 316-317. – Specifically on this find, see Makropoulou/Kōnstantinidou, METRO Thessalonikēs – Stathmos Venizelou.

27 Vitti, Poleodomikē exelixē 50, 55, 88-92, 174-176.

28 Tasia/Lola/Peltekēs, Ysteroarchaïkos naos 227-246. – Stephanidou-Tiveriou, Oikodomēmata autokratorikēs latreias 613-631.

29 Vitti, Poleodomikē exelixē 50, 55, 148-149. – On the worship of Egyptian gods in Thessaloniki, see Koester, Egyptian Religion 133-150.

30 Mallios, A Hellenistic Sanctuary at Ano Poli 239-266, for a detailed presentation of the clay figurines from two votive pits of the sanctuary. – Markē, Chōrothetēsē 96. – On the finds from the pit of the sanctuary and its identification as a *thesmophorion*, see Adam-Velenē, Thessalonikē, neraïda 86-87 figs 54-56. – Adam-Velenē, Thessaloniki 550.

31 IG X2.1 no. 4, which was found north of Hagios Dēmētrios Basilica. On the Agora, see Adam-Velenē, Dekachronē poreia 15-38.

32 IG X2.1 no. 5. Found in the Olympou Street.

was still covered by private houses[33]. In the Augustan era, the area took on a public character with the first Agora complex being built between the first and second centuries. In the late second and early third centuries AD (c. 200), a monumental Agora complex was built, covering approximately 2 hectares. It was two stories high with double *stoas* stretching along three sides of a marble-paved plaza[34]. The buildings on the eastern side served administrative functions, such as the city's archive and the state mint. A roofed theatre, an *odeion*, which was also used as a *vouleuterion*, was also built. In the fourth century the *odeion* was expanded and re-shaped into an open-air theatre[35]. The outlines of two buildings are found at the Agora's northern terrace. It is probable that one of these was a sanctuary of the Imperial cult and the other a library[36].

Due to the steep slope on the Agora's southern side a *cryptoporticus* (vaulted *stoa*) was constructed. In front of this and to the west of the Agora's monumental entrance steps were twenty, two-storied shops. The shops on the lower floor opened onto a marble-paved street, 2.5 m wide with a sewage pipe running underneath its central part. This street was in constant use until the end of the Byzantine era[37].

South of the Agora and close to the *Via Regia* was a building dated to the early third century AD. Part of its two-storied *stoa* or portico, known as *Las Incantadas*, or *Eidōla* (Εἴδωλα), and notable for its mythological carvings was still standing until the mid-nineteenth century when it was dismantled and partly transported to France[38].

Palace

It is known that there was a palace in the city in the second century BC[39]. This is probably connected to finds from Dioikētēriou Square, at the north-western part of the city, where an administrative complex existed from the third to the first centuries BC[40]. Cicero, who was in exile in Thessaloniki during 58-57 BC, mentioned a *quaestorium* (the residence of the *quaestor*)[41], which was probably also connected to the same administrative buildings in Dioikētēriou Square.

The palace of Tetrarch Caesar Gaius Galerius Valerius Maximianus built after 297 AD comprised, at its southern end, an octagonal throne room, a large room for hearings in the form of a basilica, a peristyle court with the private chambers of the emperor, baths and *triclinium*. To the east and along the walls, a hippodrome was constructed. Also, on the higher plateau to the north, a monumental *vestibulum* led from the triumphal arch to the palace. At that part of the city, the axis of the *Via Regia* was altered so that it would pass under this arch. Finally, a round temple, the Rotonda, was erected to the north of the *Via Regia*. This was probably dedicated to the official gods of the Tetrarchy – Jupiter and Hercules – and the Imperial cult[42].

Houses

More than twenty private urban villas have been excavated, mainly in the north-eastern part of the city, close to the Galerian complex. They have a central courtyard around which are arranged several rooms, including a large apsidal dining room (*triclinium*), which is almost always orientated north-south, storage rooms, water reservoirs, baths and also gardens. This type of house with a *triclinium* emerged in the fourth century AD and remained in fashion until the early sixth century. During the sixth and seventh centuries the villas were re-modelled with some of the larger rooms being subdivided. Earthquakes in the seventh century caused serious damage and it appears that only some of the villas, or parts of them, were rebuilt[43]. This type of luxury villa was imitated by the builders of more modest houses found in several areas within the city's *insulae* grid, most frequently in the centre. In contrast, the large *villae* were mostly built along the borders of the Hippodameian grid of the city[44].

Fortifications and Port

During the Roman Imperial period, the importance and population of Thessaloniki increased considerably. Important public works were now undertaken, in contrast to the situation during the first centuries of Roman occupation[45]. For example, the city walls were not maintained regularly during the early Roman period. In 58 BC, when Cicero was in exile here, their defensive capability was considerably compromised. Consequently, Cicero advised the Thessalonians to

33 Adam-Velenē, Valaneio progenestero Agoras 351-364. – Adam-Velenē et al., Oikoskeuē tou Valaneiou 85-102.

34 Adam-Velenē et al., Archaia Agora 501-531. – Adam-Velenē, Archaia Agora Thessalonikēs, vol. 1 passim. – A detailed overview of all finds from the area of the Agora is presented in Euangelidēs, Agora poleōn tēs Elladas 184-215.

35 Vitti, Poleodomikē exelixē 101-104. – Adam-Velenē et al., Archaia Agora 501-531. – Adam-Velenē, Archaia Agora Thessalonikēs, vol. 1 passim.

36 Stephanidou-Tiveriou, Voreia pleura agoras 229-240.

37 Vitti, Poleodomikē exelixē 185-186 no. 63 fig. XV pl. 50-51. – Bolē/Skiadaresēs, Strōmatographia stē notia pteryga 94-96.

38 Vitti, Poleodomikē exelixē 100-101. – Baldassarre, Contributo alla precisazione 21-35. – Mentzos, Protasē ermēneias 379-400.

39 Diodorus Siculus, Biblioteca Historica XXXII 15.2. »τὸν δ' ἕτερον ἐν Θεσσαλονίκῃ, ταλάντων ἑβδομήκοντα, κατὰ μέσην τὴν ἐξέδραν τὴν ἐν τῷ περιστύλῳ κατὰ τὴν αὐλήν« [(Andriskos said that Perseus had hidden …) another treasure of seventy talents, at Thessalonica, in the middle of the exedra of the colonnade, opposite the court].

40 Tasia et al., Anaskaphiko ergo 545-553, with older bibliography.

41 Cicero, Pro Plancio XLI.99-100. »O reliquos omnis dies noctesque eas quibus iste a me non recedens Thessalonicam me in quaestoriumque perduxit!« [O all the remainder of those days and nights during which he never left me, until he had conducted me to Thessalonica, and to the official house of the quaestor!].

42 Spieser, Thessalonique 113-122. – Vitti, Poleodomikē exelixē 63, 105-118. – Karamperē/Christodoulidou/Kaïafa, To anaskaphiko ergo 533-544. – Mentzos, Reflections on the Architectural History 333-359.

43 Vitti, Poleodomikē exelixē 153. – Karydas, Palaiochristianikes oikies 571-586. – Karydas, Palaiochristianikes oikies II 127-141, with thorough bibliography on the excavatons of relevant finds. – For an overview of the history and the changes that these rich houses underwent in Byzantium in general, their disintegration and ruralisation from the fourth to the late sixth centuries, see Sarandi, The Byzantine City 168-173, 454-454; for their use as chapels or monasteries, see ibid. p. 172; and for the incorporation of workshops in them, see ibid. 173, with further bibliography.

44 Vitti, Poleodomikē exelixē 154.

45 Vitti, Poleodomikē exelixē 55-63.

abandon the lower city when danger threatened and fortify the acropolis[46].

Barbarian invasions in the Balkans during the third century served to increase the city's strategic importance. In the middle of the third century, after centuries of neglect of the fortifications, the city got new walls. These were 1.65 m thick with rectangular towers, encompassing c. 30 hectares, which protected the city successfully during two Gothic sieges in 254 and 268[47].

After his victory against the Persians in 297, Tetrarch Caesar Galerius made Thessaloniki his capital. He expanded the city walls to the east, demolishing the luxurious urban villas that existed there, and started building a palatial complex, forever changing the character of the entire eastern part of the city[48].

Emperor Constantine I frequently stayed in Thessaloniki before 324, for approximately two years in total. Under his rule, the western part of the coastline was developed into the city's port. This remained in use throughout the Middle Ages. He also initiated other public works, such as churches, which he also had decorated, baths, water pipes and water reservoirs[49]. The square port of the city was protected by a breakwater, later known as *Tzerempoulon* (Τζερέμπουλον)[50]. Emperor Theodosius I probably had additional triangular towers added along the walls and re-enforced the southern part of the walls, as well as the sea walls. A strengthening of the city walls to the north of the modern Agiou Dēmētriou Street was undergone in the fifth century under Hormisdas, as a brick verse inscription on a tower of the eastern wall records. The walls were rebuilt in parts until the middle of the seventh century. The most characteristic example of such reconstruction is that of the north wall, which today separates the city from the later acropolis. Sea walls were rebuilt along the modern Mētropoleōs Street in Late Antiquity[51]. Already in the Roman period, the steep and rocky north-eastern part of the city was used as Thessaloniki's citadel. The site was later known, due to its triangular shape, as the *Trigōnion*[52].

Large complexes of public *horrea,* or warehouses, which enclosed parallel series of oblong storage chambers for wine, oil, and other commodities, were found in the area of the port and it seems that they were in constant use until the Byzantine era[53]. A similar building existed at the eastern end of the city outside the walls. It operated between the fourth and the sixth centuries[54]. In the same period, state warehouses were operating to the west, outside the Chrysē Gate at Vardari Square, where, among other things, wine and oil were deposited[55]. Remains of shipyards have been found next to the port, where one would expect them to be. Here ships were protected during the winter and the yards probably also operated as warehouses during the summer months[56].

Churches and Cemeteries

Large public bath houses were founded during the Imperial period in several parts of the city. Their size, greater than that of normal *insulae*, disrupted the urban grid plan, altering the face and character of the city[57]. During the Early Christian period and especially in the fifth century, large Christian churches were erected on the sites of these complexes[58]. These were: the basilica under the seventh-century Hagia Sophia, which was probably dedicated to Saint Mark[59]; the Basilica of Acheiropoiētos[60]; and the three-aisled basilica under the Hagios Dēmētrios complex[61]. Another basilica was

46 Cicero, De provinciis consularibus II.4. »Macedonia […] sic a barbaris quibus est propter avaritiam pax erepta vexatur […], ut Thessalonicenses, positi in gremio imperii nostri, relinquere oppidum et arcem munire cogantur« [Macedonia … is now so harassed by the barbarians, that the people of Thessalonica, placed in the lap, as it were, of our Empire, are compelled to abandon their town and to fortify their citadel].

47 Spieser, Note sur la chronologie 507-519. – Markē, Chōrothetēsē 96.

48 Karamperē/Christodoulidou, Diachronikotēta 393-400. – Karamperē/Christodoulidou, Galeriana erga ypodomēs 307-315.

49 On the port, see Bakirtzēs, Thalassia ochyrōsē 315-321. – On the other Constantinian works and the period that Constantine resided in Thessaloniki, see Cedrenus, Synopsis 1.496 »Καὶ δὴ τὰ κατὰ χώραν καὶ τόπους ἐρευνῶν τῇ Θεσσαλονίκῃ ἐπιβαίνει, καὶ τῷ τόπῳ ἀρεσθεὶς δυσὶ χρόνοις ἐκεῖ διατρίβει ναούς τε θαυμασίους καὶ λουτρὰ καὶ ὑδάτων εἰσαγωγὰς κατασκευασάμενος […]« [he arrived in Thessaloniki, and because he liked the site remained for two years, constructing magnificent churches, baths, and water pipes]. – On the construction of the port, see Zosimus, Historia nova 2.22, p. 93: »καὶ τὸν ἐν ταύτῃ λιμένα πρότερον οὐκ ὄντα κατασκευάσας, ναοὺς κάλλει τε καὶ μεγέθει θαυμαστῶς διακειμένοις κοσμήσας ἀλλὰ καὶ ὑδάτων εἰσαγωγὰς« [and he constructed its (Thessaloniki's) port, which had not existed previously, and decorated churches admirable for their beauty and size, in addition to water pipes]. – On aqueducts in Byzantine cities during the Early Christian period, see Sarandi, The Byzantine City 343-349, with further bibliography. – On watering works in Thessaloniki which were ascribed to Constantine, see Markē/Chatzēiōannidēs, Ydreutika erga 279-284. The city was supplied with water from the nearby Chortiatēs Mountain from the Roman Imperial period onwards; the water system was improved in the Middle Byzantine period and was in use until 1970. – Manōledakēs/Androudēs, To systēma ydromasteustēs 285-292; Akrivopoulou, Ydatogephyra Chortiatē.

50 On the *Tzerempoulon* perceived as a breakwater, see Bakirtzēs, Thalassia ochyrōsē 318-319. – Bakirtzēs, Tzerempoulon Thessalonikēs 332-337. – For a different reading of the sources, where *Tzerempoulon* is identified as a sewer or water pipe, see Odorico, Vyzantino limani 124-130. – Finally, for its identification as a breakwater, which was also part of the sewage system, see Moutsopoulos, Evraïkes synoikies 20-22.

51 Velenēs, Ta teichē passim.

52 Velenēs, Ta teichē 62-63. – Bakirtzis, Urban Continuity 47, with new archaeological finds from the area.

53 Alexandrē, Odos Stragēgou Brantouna 664 pl. 480δ. – Markē/Chatzēiōannidēs, Phrangōn 28, 273-274. – Kanonidēs, Dōdekanēsou 2, 493-495. – Markē, Epicheirēmatikotēta 236-239, finds from the plot at 18 Moskōph Street.

54 Allamanē, Dēmotiko Theatro Kēpou 634-635. – Also Toska, Dēmotiko Theatro Kēpou 698.

55 Makropoulou/Tzevrenē, METRO Thessalonikēs – Stathmos Plateias Dēmokratias 2012.

56 Cat. Thessaloniki 2002, 15. – For finds from the plots 18 Moskōph Street and 3 Danaidōn Street, see Markē/Chatzēiōannidēs, Phrangōn 28, 273-274.

57 On baths in Byzantine cities during the Early Christian period and their gradual decline, specially of the large ones, from the fourth century onwards, see Sarandi, The Byzantine City 325-342. – On the baths in Thessaloniki, see Vitti, Poleodomikē exelixē 151, 194-197, 202-203, 241-243.

58 Vitti, Poleodomikē exelixē 151, 194-197, 202-203, 241-243. – Lavvas, Poleis Christianikōn Vasilikōn 581-623. – Ćurčić, Christianization 213-244.

59 Mentzos, Symvolē 201-221. – Theocharidou, Architektonikē naōn Agias Sophias 34-39. – For a concise overview of the bibliography on the monument and travellers' accounts of it from the twelfth to nineteenth centuries, see Tampakē, Thessalonikē 114-133.

60 Xyngopoulos, Peri tēn Acheiropoiēton 472-487. – Bakirtzis, Sur le donateur 37-44. – Papazōtos, O megalos naos 121-131. – Kourkoutidou-Nikolaidou, Acheiropoiētos. – Tampakē, Thessalonikē 134-146, for bibliographic overview and travellers' accounts.

61 Sōtēriou/Sōtēriou, Vasilikē Agiou Dēmētriou Thessalonikēs. – Bakirtzēs, Vasilikē Agiou Dēmētriou. – Mentzos, Proskynēma. – Tampakē, Thessalonikē 78-101, for bibliographic overview and travellers' accounts.

founded at the western part of Agiou Dēmētriou Street[62]. The Rotonda of the Galerian complex was also converted into a church[63], and a large octagonal church[64] was founded at the west end of the city, almost mirroring the Rotonda[65]. Finally, several funereal basilicas and martyria were founded on the sites of both necropolises, east and west of the city, due to the Christian preference to be buried *ad sanctos*, i. e. near a site sanctified by martyrdom or the grave of a martyr[66].

Workshops

Remains of Hellenistic and early Roman workshops have been discovered at three locations. Two of them appear to have been used by several artisans at the same time. These artisanal activities have been located at several parts of central and coastal Thessaloniki. An extended complex of workshops was found underneath the main buildings of the palace of Tetrarch Galerius at the south-eastern end of the city, practically on the coast, as it was then, where potters, metalworkers, purple dyers and possibly bone carvers were active. These workshops operated in the period between the second or first century BC and the first century AD[67]. Another group of workshops where clay figurines and clay vessels were made was found on the middle plateau where the Agora was later built. There several potters dug their clay at the site of the later Agora, and, more specifically, indications of coroplastic production have been identified[68]. The production of vessels is attested there, too, as the deformed and overburnt spindle-shaped *unguentaria* found on the site indicate. It has been assumed that potters operated on the site of the Agora between the late third to second century BC and again in the Augustan era[69]. Finally, further uphill to the north, at modern 91 Philippou Street, there was a Hellenistic forge[70].

Regarding the artisanal activity and the spatial distribution of the workshops in the city during the Imperial and Early Christian periods several developments can be noted. After the fourth century, the Agora gradually lost its official character and the site was occupied by various artisans, exploiting existing buildings as well as the open space of the plaza for their professional activities[71]. Among others, a lime kiln, a bone carving workshop, a glass workshop, a tannery and a dyeworks operated on the site of the Roman Agora. Looking more generally at finds across the entire city, remains of workshops of the Imperial and Early Christian periods have been excavated at several sites. Potters worked in the western and eastern necropolises, but also within the city near the western and eastern walls, relatively close to the central gates. Glassworkers also worked in the eastern necropolis and within the city walls: in a workshop near the *Via Regia*; in the abandoned Agora; and in the ruins of the large public bath house on top of which the Acheiropoiētos Basilica was erected. Metallurgical activities have been found in several places in the city: around and on the *Via Regia*; to the north; and possibly near the western wall. Furthermore, it is known that to the west of the Agora was a coppersmiths' market. Remains of thread or fabric dyeworks have been found close to the axis of the Agora and it is probable that there was also a purple dyeworks here. Tanneries have been found in the Agora and close to the eastern wall. The only area where possible remains of stoneworking have been identified is in the western necropolis. Finally, remains of grape processing for the production of wine have been found outside the city walls, in the eastern necropolis and in a fortified *villa rustica* at Oraiokastron, a suburb of Thessaloniki. All collected data are presented by profession in more detail in the following.

Lime Production

Building was a constant activity in the city, with peaks as the city grew (particularly from its founding to the late Imperial period) and as extensive new public and private works were undertaken. This meant a corresponding demand for lime for use in the production of plaster and mortar. Lime was in demand throughout the Byzantine era for the repair and expansion of the city walls and the construction of baths, churches, monasteries, public warehouses and so on, as well as for the construction and repair of private buildings[72].

According to what we know, large-scale lime production was mainly undertaken in the countryside where the appropriate raw materials – limestone and plenty of firewood – could be easily found. In addition, considerable quantities

62 This basilica was partly excavated in 2010 and has been dated provisionally to the fifth century, see Chatzēiōannidēs et al., Sōstikē anaskaphē.

63 Moutsopoulos, Palaiochristianikē phasē Rotondas 361-362. – Theocharidou, Rotonta Thessalonikēs 57-75, with all prior bibliography. – Kourkoutidou-Nikolaidou/Tourta, Peripatoi 48-69.

64 Markē, Enas oktagōnikos naos 117-133.

65 Ćurčić, Christianization, 213-244.

66 Vitti, Poleodomikē exelixē 34-138, with older bibliography on the Hellenistic and Roman cemeteries of the city. – Markē, Nekropolē Thessalonikēs passim. – On Christian buildings in the cemeteries, see also Markē, Christianika koimētēria 35-46, with older bibliography. – Also, Makropoulou, Palaiochristianikos naos 25-46. – Makropoulou, Dyo prosphata anakalyphthentes naoi 705-722. – For a newly found cemetery church at the edge of the western wall's ditch, close to the Chrysē Gate, see Makropoulou/Tzevrenē, METRO Thessalonikēs – Stathmos Plateias Dēmokratias 2012.

67 For further bibliography see **cat. nos 15, 27, 45, 77**. I wish thank the excavator of the site, Dr Mariana Karamperē, for her help with the complex stratigraphy of this part of the city and for providing me with photographs from the excavations and the movable finds.

68 For a concise presentation of clay figurines found in Thessaloniki, see Kortē-Kontē, Koroplastikē Thessalonikēs passim.

69 For further bibliography see **cat. nos 19, 41, 43**.

70 For further bibliography see **cat. no. 44**.

71 On the gradual change of the character of the Agora in Byzantium in general and their change into mere market places, see Sarandi, The Byzantine City 211-252, on Thessaloniki esp. 242-243.

72 On an entire community north of Thessaloniki on mountain Chortiatēs (modern Asvestochōrē) founded by Sultan Murat II in the middle of the fifteenth century in order to exploit the lime stone of the region and where industrial lime kilns are still operating, see Zacharopoulou, Entopismos, katagraphē kai axiologēsē 347-360. – Sampanopoulou, Katalogos 48, with all prior bibliography concerning the site.

of antique and pagan sculpture and architectural elements ended up in the kilns, where they were reduced to lime[73].

During the Roman period it was forbidden to operate lime kilns in residential areas or near susceptible structures, such as threshing floors, due to the hazardous nature of the kiln fires and lime fumes. Consequently, no lime kilns have been found in the Roman-era city or surrounding area[74]. Two large lime kiln complexes dating from the early fourth century have been found at Platamōnas, a harbour on the opposite side of the Thermaic gulf. These are assumed to be connected with the building activity under Galerius and Constantine I in Thessaloniki[75]. The only lime kiln found in the city dates from the seventh century and was situated within the Ancient Agora, where it appears to have been used to make lime out of marble from the ruins of the Agora[76].

Ceramic Production

Production of ceramic objects, vessels, figurines, bricks and roof tiles must be considered self-evident in a city of the size and importance of Thessaloniki, and the presence of several workshops operating in the same period is to be expected[77]. Judging by the refuse from different workshops, it seems that there was a differentiation of production: building materials were produced in different kilns or workshops from vessels and lamps. Several late Imperial workshops have been found. These are mainly outside city walls, although there were a few *intra muros*, and most of them had rectangular kilns[78]. The majority were situated in the open spaces in the two necropolises, with a higher concentration in the western necropolis, apparently on the roads that led from the hinterland to the city gates and relatively close to the walls. They have also been found at the fringes of the city near the walls, and in open spaces in the city centre that had lost their original public character. Ceramic workshops also operated in the hinterland of Thessaloniki, towards Chalkidiki, some of which continued to function until the Late Byzantine period[79].

There is no evidence for the nature of the clay vessels produced in any of the researched workshops, at least not in terms of the sort of physical evidence that one would expect from items having been discarded on-site. Among the large number of stylistically identical vessels found throughout the city and in both necropolises, and hence considered to be local products, we find several forms of plain vessel, usually made of a yellowish or a light reddish clay, e. g. bulbous *unguentaria*, tall and slender jugs, and spherical and biconical jugs on very narrow bases[80] (**fig. 1**). Lamp moulds have been found at production sites in both necropolises and in the city centre. These show that locally produced lamps derived from Athenian tradition or prototypes[81] (**fig. 2**). Finally, it is self-evident that workshops producing bricks and roof tiles were also active in a city of the size of Thessaloniki. In addition to the plain bricks and tiles from the Roman period, three over-sized tiles with inscriptions and impressed decorations have also been unearthed that were used for the funerals of soldiers

73 On lime kilns in general, see Adam, Roman Building 65-73. – For an overview of Late Roman and Byzantine lime kilns and their technology in Greece, see Raptēs, Ergastēria 75-81, 203-217.

74 On lime kilns in Byzantium see Koukoules, Vios kai politismos, B1, 184, with references to the sources. – On regulations concerning their operation in a Late Byzantine law text that mainly repeats Early Byzantine texts, see Armenopoulos, Procheiron Nomōn 2.4.17, see nt. 413.

75 Loverdou-Tsigarida, Paragōgikē monada asvestiou 101-102. – Sdrolia, Archaiologikes ereunes (**cat. no. 1**).

76 Velenēs et al., Programma Archaias Agoras 251 (**cat. no. 2**). There are indications for another lime kiln active in the late Middle Byzantine period close to the Early Christian sea wall (near the harbour), see Tsimpidou-Avlōnitē/Lykidou/Euthymoglou, Nea stoicheia (**cat. no. 3**).

77 On the Roman heritage in pottery production in Byzantine times in Greece, see Raptis, L'eredita romana. On kilns of the Byzantine era in Greece, see Raptēs, Klivanoi – kaminoi 228-236. – For an overview of Late Roman and Byzantine potteries in Greece and the technology that their operation involves, see Raptēs, Ergastēria 35-71, 149-185. – For a shorter presentation on the same topic, see Raptis, Early Christian and Byzantine Ceramic Production Workshops in Greece. – Also Raptēs, Archaiologika tekmēria 173-196. – For an overview of clay objects (building material, vessels and lamps) present in the city, see Papanikola-Bakirtzi, Ceramics in Late Antique Thessalonikē 263-298. – Several clay objects from Thessaloniki can be found in Cat. Thessaloniki 1986a and Cat. Thessaloniki 1986b passim. – Furthermore, a plethora of clay objects found in the rescue excavation conducted along the city's east-west axis for the water supply pipeline, representative of the diversity of objects that appear in *intra muros* excavations, are published in a digital format in Rescue Excavations for Thessaloniki's Water Supply Pipeline.

78 Finds from a rescue excavation at 18 K. Palaiologou Street: Kourkoutidou-Nikolaidou, K. Palaiologou 18, 285 (**cat. no. 16**). – Two rectangular kilns for building material and vessels from a rescue excavation at 30A K. Melenikou Street: Cat. Thessaloniki 2005, 6 (**cat. no. 18**). – In the plot of the Museum of Byzantine Culture: Nalpantēs, Oikopedo 381. – Nalpantēs, Oikopedo Mouseiou 346. – Two Late Antique, rectangular, pottery kilns, whose products have not been identified were unearthed in the plot (**cat. no. 5**). – At the northern gate of the HELEXPO: Trakosopoulou, Anaskaphē DETH 208 figs 1-2; Trakosopoulou, Chōros DETH 555-556 pl. 213. – Among several third to fourth-century graves some artisanal installations were traced, such as a medieval cistern, a lime pit and remains of a possibly first-century clay figurine workshop (**cat. no. 42**). – On the pottery from the plot, see Pantē, Keramikē 466-485. – In the plot at the junction of G. Kolōniarē, Galanakē and V. Papathanasiou Streets: Nalpantēs, Kolōniarē – Galanakē – Papathanasiou 405 fig. 9 pl. 226β. Two rectangular pottery kilns were found; the second one only partly preserved (**cat. no. 8**). – In the plot at the junction of Giannitsōn, K. Mazarakē and Kavalas Street, where five large kilns (presumably for bricks and roof tiles) and a reservoir were found: Lamprothanasē-Korantzē/Antōniadou, Odos Giannitsōn; for the dating on one of them in the fifth century, see Iōannidēs et al., Chronologēseis romaïkōn klivanōn. For a thorough presentation and interpretation of the workshop, see Raptis, Brick and Tile Producing Workshops (**cat. no. 13**). – In the plot at the junction of N. Kapatou, G. Ivanōph and Galanakē Streets, at the plot of the 66th Elementary School, where four kilns (two semicircular and two ellipsoidal ones) were unearthed, see Makropoulou, Taphoi kai taphes 373 nt. 240. – Archives of the 16th Ephorate of Prehistoric and Classical Antiquities (**cat. no. 20**). – For the plot at 17 Mavilē Street, see Vavritsas, Anaskaphai kentrikēs Makedonias 505 (**cat. no. 17**). – Finally, on the site of the Ancient Agora potters were once again active after the fifth century (**cat. no. 19**).

79 Cat. Thessaloniki 2005. – A semicircular kiln (**cat. no. 6**) founded at the end of the Early Christian period, was unearthed in the village Vasilika close to the Grammoustikeia watercourse, where Byzantine water mills have also been found (**cat. no. 68**). On the Byzantine mills, see Theodōridēs, To ktēmatologio 417-418. – Papangelos, Agramades 65-66.

80 Nalpantēs, Anaskaphē sto oikopedo 119-127 pl. 34-41. – Makropoulou, Taphoi kai taphes 440-447 pl. 7-19, 63-64. – Pantē, Keramikē esp. 469-471.

81 For finds from the eastern necropolis, see Petsas, Theologikē Scholē 334-339 pl. 345-359 (**cat. no. 39**). Another example, from the western necropolis, was found on the plot at the junction of Chrysospathē and Monachou Samouēl Streets: Cat. Thessaloniki 2003a, 13 (**cat. no. 40**). – For findings from the Ancient Agora of the city, see Adam-Velenē, Lychnoi 192-193 no. 85. – Velenēs/Poulou-Papadēmētriou/Zachariadēs, Lychnaria (**cat. no. 41**).



Fig. 1 Clay vessels, necropolis of Thessaloniki, late third to fourth centuries.

or gladiators. These present yet another special type of local ceramic product[82]. We see from the large number of different brick stamps used during the period of the Tetrarchy, when Galerius' complex was built, that several brickyards were operating in the city (**fig. 3**). We can argue that production continued into the fifth century because parts of several Early Christian monuments – the Basilica of Hagios Dēmētrios, the Acheiropoiētos Basilica, the five-aisled basilica underneath Hagia Sophia and the Christian parts of the Rotonda – are made with bricks marked with the same stamps[83]. Production sites for bricks and roof tiles have been unearthed on the plain west of the city walls, which was partly a marsh until the late nineteenth century, at the site known from sources from the second half of the sixth century or seventh century as the *keramēsios kampos* (κεραμήσιος κάμπος, pottery plain). Previously, these were considered to have been contemporary



Fig. 2 Clay oil lamp mould, eastern necropolis of Thessaloniki mid-fourth century.



Fig. 3 Stamped bricks from Early Christian buildings in Agiou Dēmētriou Street.

82 Three identical over-sized tiles (0.76 m × 0.50 m × 0.07 m), two of which were produced as *stelai* (funerary monuments), were found re-used in a third-century grave in the western necropolis. They must have been produced in one of the nearby operating workshops in order to be placed over the graves of two soldiers or gladiators who lost their lives at the same time. The whole decoration was inscribed on the fresh clay with swift movements. The names of the deceased were inscribed on the upper part of the tile while the clay was still soft: Κώβιος (Kōvios) and Δεκουράτος (Dekouratos). On both tiles a large helmet is depicted with a long crest from the top of the head to the neck. The helmet is facing an oblong, curved branch or young tree possibly laurel. On Kōvios' tile a sword is depicted at the lower part of the tile, and an identical sword pointing upright is placed next to the helmet at Dekouratos' tile. Diagonally arranged grooves are impressed on the reverse of both tiles. Makropoulou, Odos Lankada 263 illus. 3. – Makropoulou, Taphoi kai taphes 91 pl. 6.

83 For a concise overview in English of the archaeological research conducted in the area of the palace, see Hadjitryphonos, The Palace of Galerius in Thessaloniki 203-217. – For a short overview of the use of clay (raw and baked) in Roman architecture, see Adam, Roman Building 58-65. – On Thessalonian finds, see Vickers, Fifth Century Brickstamps 285-294. – Theocharidou, Symvolē meletēs paragōgēs 108-109. – Theodōridēs, To ktēmatologio 414. – In addition, for stamps on the bricks of Acheiropoiētos, see Raptēs, Paratērēseis 220-226. – Theocharidou, The Walls 221-235. – Athanasiou et al., Plinthoi 299-316, where eight different stamps are identified as being used in the Galerian palace between the fourth and the seventh centuries, and all bibliography on brickstamps from other monuments of Thessaloniki is gathered.



Fig. 4 Glass vessels from Thessaloniki, third to fourth centuries.

with the historical sources, although most of them have now been redated to the Late Byzantine period[84].

Glassworking

The invention of glassblowing saw a great expansion of glassworking and secondary glass workshops from the first century AD. The latter were workshops in which objects were formed from raw glass that was imported from the great glass-producing centres of the Levant and Egypt and recycled glass objects, operated in the major cities of the Roman Empire (**fig. 4**). In the first centuries of the Roman Imperial period glassworking became a relatively common trade and workshops have been found in small towns and insignificant settlements[85]. Archaeological research reveals that glass workshops were active in Thessaloniki during the Imperial period, especially during the late Imperial period, and several forms of vessels have been attributed to them. It seems that in the late first century AD a few special forms of *unguentaria* were manufactured locally, such as fine-walled globular and bird-shaped forms[86]. Local production increased dramatically in the fourth and fifth centuries (**fig. 5**) when several forms of tableware – jugs, bottles, beakers and bowls – as well as lamps and *unguentaria*, were produced using free blowing, mould-blowing and dip-mould-blowing tech-

84 On the fact that the plain west of the city walls was called »the plain of the potters«, see Bakirtzēs, Agiou Dēmētriou Thaumata 2:5. §288: »ἐλθεῖν εἰς τὰ πρὸς ἡμᾶς μέρη, καὶ κρατῆσαι τὸν Κεραμήσιον κάμπον.« [(upon) arriving in our region, he occupied the *Keramēsios kampos*]. For the bibliography on locating the site in various other places, see Bakirtzis, Imports, Exports and Autarchy 101 nt. 66. – For workshops, recently redated to the Palaeologan era, see: 91 Monastēriou Street: Makropoulou, Monastēriou 91, 503-504 (**cat. no. 10**). – 93 Monastēriou Street: Makropoulou, Monastēriou 93, 379-380 (**cat. no. 11**). – Eleutheriadou et al., Sōstikes anaskaphes Thessalonikēs 274-275 fig. 10. – 48 Giannitsōn Street: Makropoulou, Giannitsōn 48, 618 (**cat. no. 9**). – For the new dating, see Makropoulou, Taphoi kai taphes, 371 nt. 238, 373 nt. 240. – One of the kilns that have been unearthed in the plot at the junctions of G. Kolōniarē, Galanakē and V. Papathanasiou Streets (**cat. no. 8**) dated to the Early Christian period, Nalpantēs, Kolōniarē – Galanakē – Papathanasiou 405 illus. 9 pl. 226β, has been lately identified as a brick or roof tile kiln, see Makropoulou, Taphoi kai taphes 373 nt. 240. – In the plot at the junction of Giannitsōn, K. Mazarakē and Kavalas Street, where five big kilns (presumably for bricks and roof tiles) and a reservoir were found: Lamprothanasē-Korantzē/Antōniadou, Odos Giannitsōn; for the dating of one of them to the fifth century, see Iōannidēs et al., Chronologēseis romaïkōn klivanōn. – For a thorough presentation and interpretation of the workshop, see Raptis, Brick and Tile Producing Workshops (**cat. no. 13**).

85 For an overview of Roman glassworking see Antonaras, Fire and Sand 3-39. – Price, Glass-working 167-190. – Stern, Roman Glassblowing 441-481. – Sternini, La Fenice passim. – On an extensive catalogue of Roman glass workshops throughout the Roman Empire and even beyond its frontiers, see Sternini, La Fenice 135-200. – For an overview of Late Roman and Byzantine glassworking workshops in Greece and the technology their operation involved, see Raptēs, Ergastēria 71-75, 186-202. – Also Raptēs, Yalopoieia kai yalourgeia 165-176, where some issues concerning the identification of glass making sites should be revised.

86 Antonaras, Glass Doves and Globes 27-33.

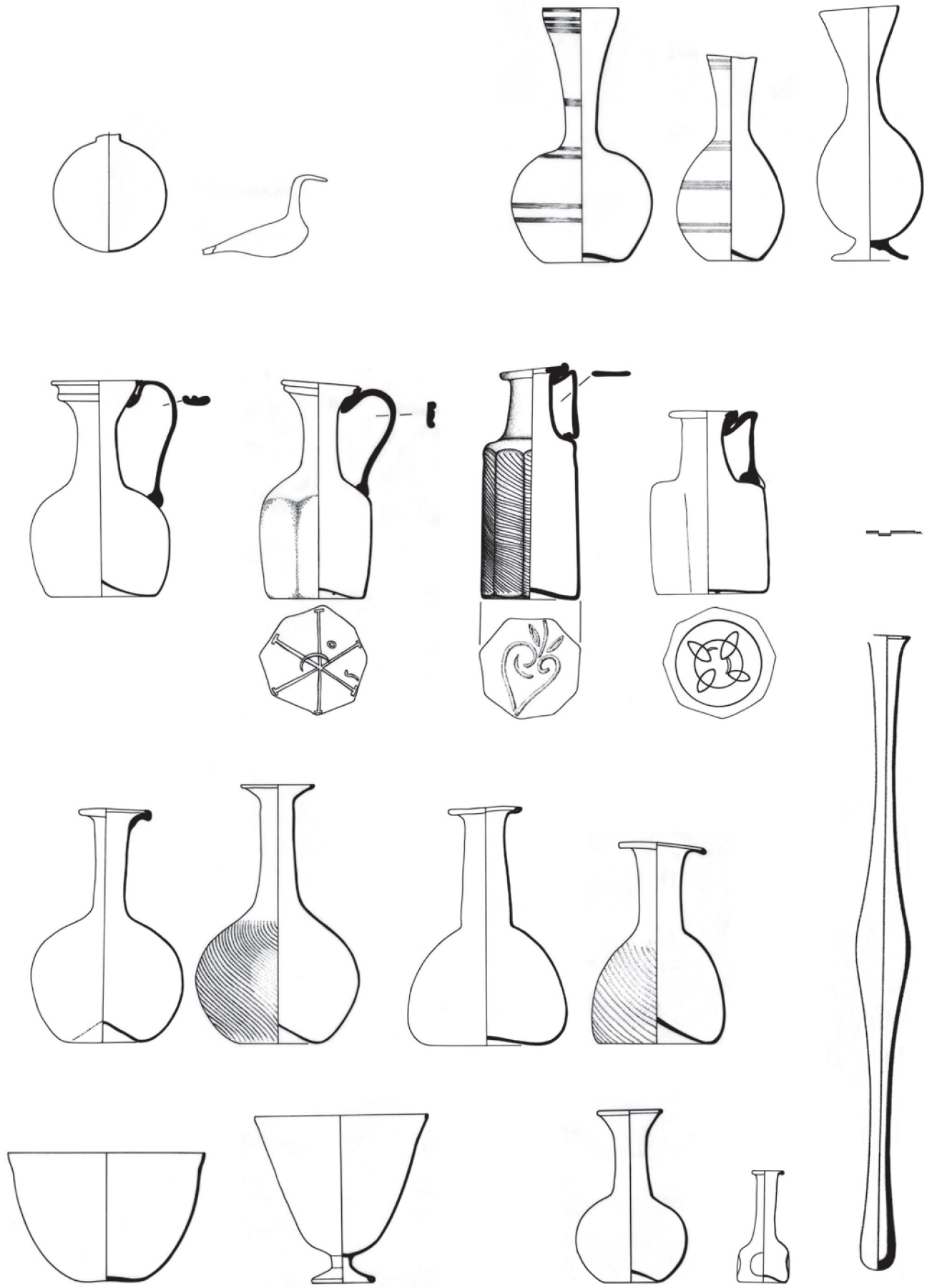


Fig. 5 Drawings of locally produced glass vessels, first and fourth to fifth centuries.



Fig. 6 Glass furnace, Thessaloniki, 45 Vasileōs Ērakleiou Street, sixth to seventh centuries.

niques. These were mostly simple, undecorated utilitarian forms. Some, mainly in the third or fourth centuries, were decorated with dip-mould-blown oblique ribs. Some other vessels were shaped in prismatic forms, on a simple level achieved by the use of indentations, or on a more complex level by mould-blowing. Fewer examples were decorated with engraving in the form of simple lines and strokes[87]. Different types of glass objects, mainly beads and gems, as well as a few bracelets, are amply represented among the archaeological finds from the city. It is apparent, due to the fact that identical objects are found throughout the Empire, that several types of beads and bracelets were imported[88]. However, there is also evidence that some forms of larger glass gems, probably more suitable for the embellishment of precious metal objects, e. g. crosses or book bindings, than as individual jewels, were locally produced, since some examples were found in the debris of a glass workshop at the centre of the city[89] (**cat. no. 64**).

Glass workshops, just like other installations using open fires, were obliged by law to operate outside the city walls or at the uninhabited edges of the cities for public health and safety reasons. For example, we find a workshop operating in the eastern necropolis, probably in the sixth century, abiding by the law[90]. However, remains of glassworking in Thessaloniki have also been discovered within the city walls, in abandoned public spaces – such as the public bath house on top of which the Acheiropoiētos Basilica was erected in the mid-fifth century – and on the site of the Ancient Agora, where after the fifth century, and certainly in the seventh century, several artisans operated workshops[91] (**fig. 6**). Fur-

87 Antōnaras, Rōmaïkē kai palaiochristianikē yalourgia 75-84 (**cat. nos 61-64**). – Antonaras, Production and Distribution. – Antonaras, Glass Working Activities. – On glass jewels present in Early Christian Thessaloniki, see Antonaras, Glassware in Late Antique Thessalonikē 321-327.

88 Antonaras, The Use of Glass in Byzantine Jewelry 331. – Antonaras, Production and Uses of Glass 189-198. – Antonaras, Glassware in Late Antique Thessalonikē 319-324, where all prior bibliography is quoted.

89 Antōnaras, Vasileōs Ērakleiou 263-272. – Antonaras, An Early Christian Glass Workshop 95-113. – Antonaras, A Special Group 9-10. – Antōnaras, Mia idiaiterē omada.

90 Find located at the site of the Theological Department of Aristotle University of Thessaloniki (**cat. no. 63**). – Antōnaras, Rōmaïkē kai palaiochristianikē yalourgia 72-76. – Antōnaras, Yalopoiia kai yalourgia 237-258.

91 Antōnaras, Rōmaïkē kai palaiochristianikē yalourgia 61-72. – Antōnaras, Yalopoiia kai yalourgia 237-258. – Finds include remains at the Ancient Agora (**cat. no. 61**), and on the public bath house east of the Acheiropoiētos Basilica (**cat. no. 62**).

thermore, glass workshops also operated in other densely populated and built-up parts of the city's centre. A well-preserved, late-sixth-century glass workshop has been excavated in the corner premises of a well-built, two-storied *insula* at the junction of two streets. Several phases of glass furnaces were preserved in it, along with much glass production refuse. It had two entrances, probably extending its activities onto the pavement in front of it, preserving what appears to be a generally quite usual picture of a glass workshop in this period[92] (**cat. no. 64**). Finally, it should be noted that the use of a separate melting pot is identified only in one of the sites. In the other three, indications for melting tanks imbedded in the furnace are attested.

Metalworking

Metalworking was a fundamental requirement to meet many of the needs of the city's population throughout its history[93]. The earlier indications of the presence of metalsmiths in Thessaloniki, located in at least two parts of the city, is dated to the period between the first century BC and the first century AD[94]. Early Christian metalsmiths' workshops have been identified in the centre of the city and near the western city walls[95], while a set of melting pots for jewellers has been found at the centre of the city in an excavation at the Saint Dēmētrios Basilica. They are funnel-shaped, pointed, micaceous clay vessels. Two of them are the size of a thimble, one of them containing 3.8 ml; and the other one 4.5 ml. The other three pots are the size of small cups, one of them containing 37 ml and the other two 42.5 ml[96]. Furthermore, two Late Roman moulds for the production of jewellery were found in the area of the city's Ancient Agora[97]. It should also be noted that the extraction of gold in Macedonia and especially from the river beds close to Thessaloniki is a well-attested activity known from Roman times and throughout the Byzantine period[98].

From the *Passio Altera* of Saint Dēmētrios' life it is known that a coppersmiths' market existed to the west of the main Agora of the city (the *Megalophoros*)[99]. The kind of artworks these workshops produced in the late fifth or sixth century include a bronze open-work monumental arch with a vine scroll emerging out of a *kantharos*, part of a ciborium's decoration, and a monumental cross-shaped lamp-holder, *polykandelon* (**fig. 7**). Both of them were found in the apse of the basilica under Hagia Sophia. It is unfortunate that only the word ΑΝΕΘΕΤΟ† (*anetheto*), i. e. »dedicated«, remains on the arch and not the part with the name of the dedicator. The arch probably decorated a ciborium over the Holy Table, a reliquary, or the entrance of the chancel screen, over which was probably the *polykandelon*[100].

In the *Miracles of Saint Dēmētrios* it is also mentioned that gold and silver objects were bought in the city's market and kept in the houses of eminent Thessalonians, although it is

92 Antōnaras, Vasileōs Ērakleiou 263-272. – Antonaras, An Early Christian Glass Workshop. – For a similarly placed workshop in the neighbouring city of Edessa see Antonaras/Chrysostomou, A Secondary Glass Workshop, where several other similar glass workshops are mentioned.

93 An important paper on *Artistic Metalwork as a Commodity Production in Byzantine Thessaloniki* was written by the late Sotiris Kissas that, unfortunately, was never published. Most of the written sources were thoroughly examined as well as most of the objects that were by then known to be connected with Thessaloniki. I wish to thank Sotiris Kissas's son, Georgios Kissas, for letting me see the extant part of this manuscript, which helped me considerably in the study of this aspect of artisanal activities in Thessaloniki. – On metalworking in general, see Forbes, Metallurgy 41-80. – Also on ancient metallurgy see Forbes, Studies in Ancient Technology, vol. 8, 1-155. – For an overview of Late Roman and Byzantine finds connected with metallurgy in Greece and the technology their operation involved, see Raptēs, Ergastēria 81-87, 136, 219-226, 315-316.

94 Finds from Nauarinou Square, under the Palace of Galerius (**cat. no. 45**) where indications of casting copper satues in clay molds were found, and finds from 91 Philippou Street plot (**cat. no. 44**).

95 Finds from the Ancient Agora: Velenēs et al., Programma Archaias Agoras 251. – Valavanidou, Ergastēriakes chrēseis 127 (**cat. nos 49, 50**). – 2 Leōnida Iasonidou Street: Markē, Iasonidou 2, 515-517 (**cat. no. 46**). – A circular kiln with slag and some stone and metal tools were unearthed in the site of the Agias Sophias Metro Station, see Paisidou/Vasiliadou/Tzevrenē, METRO (**cat. no. 48**). – At 7 Zephyrōn Street, see Cat. Thessaloniki 2001, 7. – Also Markē, Zephyrōn 7, 586-587 figs 11-12 (**cat. no. 47**). – *Insula* of Philippou, Dragoumē, Iordanidē and Arrianou Streets, nowadays 91 Philippou Street (**cat. no. 44**), see Vokotopoulou, Nea Philippou 91, 362-364 illus. 2 pl. 213b, 214a-g. – Vitti, Poleodomikē exelixē 229-232, no. 115.

96 The vessels were illustrated and described without any further discussion as to their size and use in Cat. Athens 2002, 101 no. 87 (P. Kampanis). For the weight of different metals that each one of the melting pots could contain see the relevant table in the catalogue (**cat. no. 51**). For references in Byzantine texts on these vessels see Koukoules, Vios kai politismos, B1, 228.

97 Adam-Velenē et al., Archaia Agora 522. – Apart from these two moulds, several others have been also excavated in the shops of the Agora, dating from later periods, exhibited in the museum of the Ancient Agora. These are moulds for spherical buttons; rings; discoid, rectangular, square, star-shaped and pyramidal amulets and plates, bearing beaded and other geometrical patterns on them; and Greek crosses bearing the letters that form the words ΦΩΣ and ΖΩΗ (»Light« and »Life«) on the finials of their crossbars.

98 For an overview of the mining in Byzantium, see Matschke, Mining 112-116. – On the requirement of members of the curial class to serve as procurators of mines (*procurator metallorum*) in Macedonia at the end of the fourth century, see C. Th. 1.32.5: »Cum procuratores metallorum intra Macedoniam […] soliti ex curialibus ordinari« [Since the procurators of the mines within Macedonia […] who are customarily appointed from the decurions]. – On gold mining in Macedonia and Thrace, see esp. Vavelidēs, Koitasmata chrysou 74-93. – Vavelidēs, Koitasmata 47-62. – On the extraction of gold from riverbeds during the Roman and Byzantine periods and the impressive remains of big, long hills of pebbles and stones, on the sites of extraction in central Macedonia in particular, see Papangelos, Agramades 63-72. – For the remains of a gold mine, and/or refining installation at the region east of Thessaloniki, see Theocharidou, Orycheio Peristeras 408. – Theocharidou, Enkatastasē 27-28 (**cat. no. 76**). – On iron and copper mining in Roman Macedonia, see Samsaris, Le mines et la metallurgie de fer et de cuivre 152-162.

99 Tafrali, Topographie de Thessalonique 126 nt. 2. – Bakirtzēs, Agiou Dēmētriou Thaumata 37, 350 *Passio Altera* γ΄ in Miracles 1997, 36: »ἐκ δυσμῶν του τῆς πόλεως μεγαλοφόρου ἐν τῇ ἐκεῖσε Χαλκευτικῇ λεγομένῃ στοᾷ« [in the western part of the city's *Megalophoros*, in the so-called *Chalkeutikē Stoa*]. – Bakirtzis, Imports, Exports and Autarchy 99. – It is known from the Price Edict (AD 301) that bronzeworkers were paid 8 % of the price of the metal they processed, and 10 % for gold and silver, making their trade quite a profitable one. Doyle, Two New Fragments 95-97. – Bagnall, Fourth-Century Prices 69-76.

100 Drossogiannē, Mesaiōnika Makedonias 235-240. – Cat. Thessaloniki 2011a, 171-172 no. 64 (A. Antonaras). On the find in general, see Antōnaras, Oreichalkina 21-22. – Antōnaras, Oreichalkina eurēmata; esp. on the ouriachoi (οὐρίαχοι), i. e. the stemmed glass lamps that were found with the lamp-holder and presumably hung from it, see Antonaras, Old and Recent Finds of Byzantine Glass 88 pl. III/6.



Fig. 7 Bronze arch from the apse of the basilica under Hagia Sophia, fifth-sixth centuries.



Fig. 8 Bronze chains from the basilica under Hagia Sophia, fifth-sixth centuries.

not clear which ones were locally produced[101]. The ciborium of Saint Dēmētrios though, was indeed made by a local silversmith. The Archbishop had summoned a silversmith to ask him to take the throne and melt it down to use the silver for the production of a new ciborium after the old one was damaged by fire[102]. However, the throne was not destroyed, because a Master Mēnas donated seventy-five *litrae* (pounds)and an Iōannēs, a lawyer of the city, offered forty *litrae* of silver for the ciborium as did others who preferred to keep their anonymity and the new ciborium, weighing more than 115 *litrae* of silver, was made with this metal[103]. The original ciborium with silver doors, bed and candelabrum, might also have been locally produced. The new ciborium was situated in the middle of the church towards the left side. It was hexagonal and enclosed

101 Bakirtzis, Imports, Exports and Autarchy 98-100. – Bakirtzēs, Agiou Dēmētriou Thaumata 1:1 §23: »κάτεισιν εἰς τὸ πραιτώριον αὐτοῦ· καὶ ἄρας ὧν ἔχρῃζεν, ἄνεισι πάλιν εὐθὺς ἐπὶ τὸν σεβάσμιον οἶκον τοῦ μάρτυρος καὶ προσκομίσας αὐτόθι χρυσέά τε καὶ ἀργυρέα εἴδη πολύτιμα καὶ πολλά, καὶ ἐν χρυσέοις στατῆρσιν οὐκ ὀλίγον ποσόν« [he descended to his *praetorium*, took what he needed, and ascended forthwith to the venerable house of the martyr, bringing (with him) many valuable gold and silver items and a not inconsiderable sum of gold staters].

102 Bakirtzēs, Agiou Dēmētriou Thaumata 1:5 §57: »καὶ ὡς ἐκέλευσε κληθῆναι τὸν ἀργυρουργὸν, ἐπὶ τὸ ἐντείλασθαι αὐτῷ λαβεῖν τὸν θρόνον« [and he had invited the silversmith, to enjoin him to take the throne].

103 Bakirtzis, Imports, Exports and Autarchy 100. – Bakirtzēs, Agiou Dēmētriou Thaumata 1:5 §60: »προσήγαγεν (ὁ κύρις Μηνᾶς) ἑβδομήκοντα πέντε λίτρας ἀργύρου« [he brought 75 pounds of silver], §61: »Ἰωάννην, ἕναν τῶν παλαιῶν δικολόγων τῆς περιφανοῦς Θεσσαλονίκης τυγχάνοντα […] προσάγοντα ὑπὲρ τῆς αὐτῆς τοῦ ἡγιασμένου κιβωρίου αἰτίας ἀργῦρου λίτρας τεσσαράκοντα. Καὶ ἄλλοι […] προσήγαγον« [Iōannēs, one of the oldest lawyers in glorious Thessaloniki, offered forty pounds of silver towards the same purpose (the holy ciborium)].

by six columns and walls made of hammered silver. It had a hexagonal roof with a circular upper part, and a large globe with lily stems below it stood on top of the roof, and was supporting a cross. It had silver doors and a silver bed in the middle[104]. Again, the aforementioned Archbishop's silver throne in the Saint Dēmētrios Basilica might also have been locally produced. When fire swept through the church, the original ciborium melted and some of the silver was lost. Not having a sufficient quantity of silver to hand for the creation of a new ciborium, the archbishop considered using the silver from the throne[105]. Still in the same church, the iron chains that were used to hang silver krater-like lamps in the interior were probably local products[106]. It is also probable that the massive bronze chains found in excavations east of Hagia Sophia decorated with large barrel-shaped »beads« and Christograms were locally produced (**fig. 8**). These chains held the apparently quite large, if not monumental, *polykandelon*. Given the find location, it was probably the one at the middle of the central aisle of the huge, five-aisled basilica under the Hagia Sophia, the one assumed to be the cathedral of Early Christian Thessaloniki[107]. Few surviving objects can be ascribed tentatively to Thessalonian silversmiths, such as the silver reliquary from the *enkainion* (*confessio*) of the *extra muros* basilica on Tritēs Septemvriou Street[108] (**fig. 9**), the Missorium of Theodosius I[109], the so-called Achilles Paten of Pausilypos[110], and the silver reliquary from Nea Irakleia in Chalkidiki[111] (**fig. 10**). Reliquaries in the form of the Saint Dēmētrios' ciborium were made occasionally both for Thessalonians and pilgrims and it is quite probable that they were made by local silversmiths[112]. Finally, stamped lead water pipes (**fig. 11**) and bronze steelyards (*kampanoi*), such as those found in excavations at the centre of the city, must also have been local products[113] (**fig. 12**).

104 Bakirtzēs, Agiou Dēmētriou Thaumata 152-154, 380, 1:1§87: »ὅρα τὸ ἱερόσκευον ἐκεῖνο καὶ περικαλλὲς δημιούργημα κατὰ μέσον τοῦ ναοῦ πρὸς τοῖς λαιοῖς πλευροῖς ἐφιδρυμένον ἑξαγώνῳ σχήματι, κίοσιν ἓξ καὶ τοίχοις ἰσαρίθμοις ἓξ ἀργύρου δοκίμου καὶ διαγεγλυμμένου μεμορφωμένον, καὶ τὴν ὀροφὴν ὡσαύτως ἀπὸ τῶν ἑξαγώνων πλευρῶν κυκλοφορικῶς ἀνίσχουσαν καὶ εἰς μίαν στρογγύλην ὡσεὶ ποδὸς ἀπολήγουσαν σύνδεσιν, σφαῖράν τε ἀργυρέαν μεγέθους οὐ μικροῦ φέρουσαν ἄνωθεν, ὑφ'ἣν ὡς κρίνου βλαστοὶ θαυμάσιοι περιέχονται, ὧν πάντων ἐπάνω τὸ κατὰ τοῦ θανάτου πεπηγὸς τρόπαιον ἀκτινοβολεῖ, τῷ μὲν ἀργυρέῳ δημιουργήματι τὰς τοῦ χώματος ὄψεις παρασκευάζον ἐκπλήττεσθαι« [he saw that most sacred and beautiful hexagonal creation, built in the centre of the church towards the left, with its six columns and equal number of walls, of pure hammered silver, and its covering, which rose cyclically above the sides of the hexagon to conclude in a round connecting element nearly a foot in diameter which supported a large silver sphere beneath which are all those things which, like the marvelous shoots of a lily, the trophy erected over death (viz. the cross) brightens with its light, which astonishes mortal eyes with the brilliance of silver]; 1:1§88: »τὸν πρὸς ταῖς ἀργυραῖς θύραις« [which stood before the silver gates]; 1:1§89: »ὁρώμενον ἀργύρεον κατὰ τὸ μέσον ἱδρυμένον ὥσπερ σκιμπόδιον, οὗ κατὰ τὸ πρὸς κεφαλῆς μέρος […] κατὰ δὲ τὸ πρὸς τοῖς ποσὶ τοῦ κραββάτου μέρος« [he saw the silver couch, at its head (…) and at the foot of the couch]. The ciborium was made of silver and some people believed that underneath it was the body of the Saint. It looks like a bed on which was rendered the face of the Saint: Bakirtzēs, Agiou Dēmētriou Thaumata 1:1 §22: »ἄπεισιν εἰς τὸ λεγόμενον κιβώριον τὸ ἀργυροῦν τοῦ ἁγίου καὶ πανενδόξου μάρτυρος Δημητρίου, ἔνθα φασί τινες κεῖσθαι ὑπὸ γῆν τὸ πανάγιον αὐτοῦ λείψανον. Ἐκεῖσε τοίνυν παραγεγονὼς ὁ ἔπαρχος οἰκείοις ποσί, καὶ εἰσελθὼν καὶ ἀπερείσας τὸ πρόσωπον εἰς τὸ ὃν αὐτόθι ὡσανεὶ κραββάτιον ἐξ ἀργύρου, ἔνθα καὶ ἐντετύπωται τὸ θεοειδὲς πρόσωπον τοῦ αὐτοῦ πανσέπτου ἀθλοφόρου« [he went over to the silver ciborium of the saint and all-glorious martyr Dēmētrios, where some say his holy relics lie beneath earth. And when the *eparch* (prefect) walked to the spot and arrived there, he entered the sacred space and, resting his face on the silver bed-like structure there, on which was imprinted the godlike face of the venerable trophy-bearer]. – On the ciborium, see Pallas, Le ciborium hexagonal 44-58. – On the pilgrimage to Hagios Dēmētrios in Byzantine times, see Mentzos, Proskynēma passim. – Among other issues of the cult of Saint Dēmētrios and his tomb, the ciborium and its depiction on the wall mosaics of the northern aisle of Hagios Dēmētrios is discussed in Bakirtzis, Pilgrimage to Thessalonike 176-177. – For its character as a spatial icon with thorough presentation of the bibliography on the ciborium and its performativity, see Bogdanović, The Performativity 275-301.

105 Bakirtzēs, Agiou Dēmētriou Thaumata 1:5 §55: »Συνέβη, φησί, τὸ ἐν τῷ παναγίῳ αὐτοῦ τεμένει κιβώριον, ὅλον ὑπάρχον ἐξ ἀργύρου, λελαμπρυμένον, ἐμπρησθῆναι νυκτός ὡς διαλυθῆναι πάντα τὸν ἄργυρον, καί τι μέρος αὐτοῦ μειωθῆναι. Ὁ γοῦν εἰρημένος ὁσιώτατος ἀρχιεπίσκοπος, σπεύδων ἐκ καινῆς κατασκευάσαι τὸ προλεχθὲν ἅγιον κιβώριον, καὶ μὴ εὑρίσκων ἀναλογοῦσαν τὴν ὁλκὴν τοῦ χωνευθέντος ἀργύρου πρὸς τὴν τοῦ παντὸς ἔργου συμπλήρωσιν, ἐβουλεύετο τὸν ἐν τῷ αὐτῷ πανσέπτῳ ναῷ ἀργύρεον θρόνον λῦσαι« [It happened, he said, that the ciborium in its sacred precinct, made entirely of brilliant silver, caught fire one night, with the result that all the silver melted and part of it was depleted. The pious archbishop, fervently wishing to rebuild the ciborium and seeing that the weight of the melted silver was insufficient to repair it in its entirety, thought to melt down the silver throne in the same venerable church].

106 From the top of the ciborium was hunging with an iron chain a bright (multi-lamped) silver krater, Bakirtzēs, Agiou Dēmētriou Thaumata 2:5 §104: »ἐκ τῆς διὰ τῆς κορυφῆς τοῦ κιβωρίου κρεμαμένης ἁλύσεως σιδηρᾶς, ἐξ ἧς πολύφωτός τις ἀπηωρεῖτο καὶ ἀργύρεως τηνικαῦτα κρατήρ« [from the iron chain hanging atop the ciborium, from which a multi-lamped and silver krater was hanging].

107 Partly on display in the permanent exhibition of the Museum of Byzantine Culture, Thessaloniki. For the excavation and the chains, see Kalligas, Anaskaphai Agias Sophias 82-83 fig. 6. – For a detailed presentation and a new approach to the true nature of the bronze finds from the basilica's apse and the chains from the central aisle, see Antōnaras, Oreichalkina 21-22. – Antōnaras, Oreichalkina eurēmata.

108 A relatively simple silver casket bearing an inscribed Greek cross on each side, a Christogram on its lid, and a carelessly ingraved inscription Ου[γγιαι] Δ' γρ[άμματα] ΙΔ΄, referring to its weight (i.e. four ounces and fourteen grams, c. 127 g), see Kourkoutidou-Nikolaidou, Enkainio vasilikēs 70-81. – Makropoulou, Palaiochristianikos naos 25-46 esp. 30 pl. 6b, 7a. – For another, seemingly very similar oval bronze casket with an inscribed cross on it, now lost, which was found within a fifth-century sarcophagus-like marble box in the *enkainion* of a ninth-century church at the centre of the city, see Euangelidēs, Eikonomachika mnēmeia 342-343 fig. 3.

109 Tsitouridou, To missorio 187-196.

110 Bakalakis, Παυσίλυπος von Thessalonike 43. – Nigdelēs, Epigraphika Thessalonikeia 480-481, with all prior bibliography on this octagonal silver plate dated c. 330-345. – The plate bears around its base the inscription Παυσιλύπου Θεσσαλονίκης λ(ίτρας) ιε refering to the weight of the plate and the name probably of the artisan that made it, or quite probably to the name of its owner.

111 Tsitouridou, Palaiochristianikē technē 249, where the casket was considered as a probable local product. For the original publication of the object, see Michaēlidēs, Argyra leipsanothēkē 48-49. – The iconography and the technique of the casket were discussed in Panayotidi/Grabar, Un reliquaire paléochrétien 33-48. – The casket was presented in detail and discussed by Noga-Banai, The Trophies of the Martyrs 9-38 figs 1, 8-11, where it was convincingly attributed to a western, probably Roman workshop, and dated to the late fourth century.

112 Bakirtzis, Pilgrimage to Thessalonike 179. – For the remains of what has been assumed to be the guest house for the pilgrims until the seventh century, which was later transformed into a workshop see ΥΠΠΟ, Epitropē parakolouthēsēs 327, 329.

113 The lead pipe was found at 7 Zephyrōn Street, see Markē, Zephyrōn 7, 586-587 figs 11-12 (**cat. no. 47**). – Cat. Thessaloniki 2001, 7, illustrated in Cat. Athens 2002, 214 no. 245 (E. Markē), dated to the fifth or sixth century. On the extant part of the pipe a relief inscription ΦΙΛΟΔΕΣΠΟΤΟΥ written with capital letters is preserved. For a lead pipe inscribed ΕΠΙΓΕΝΟΥΣ with identical lettering from a third-century house from Dion see Pingiatoglou et al., en Diō tō pierikō. – Another lead pipe bearing the inscription ΕΡωΤΙΑΝΟΥ also with identical lettering with the Thessalonian find is exhibited in the Archaeological Museum of Patras dated to the Roman period. Another lead pipe with similar writing preserving the word CωΤΗΡΟC, dated to the first decades of the third century AD was found in the excavations of Thessaloniki's metro, see Misailidou-Despotidou, METRO Thessalonikēs 2012.The bronze steelyard was found in a rich urban house excavated in the plot at 75 Agias Sophias Street and 18 Sophokleous Street, dated to the first half of the fifth century, see Karydas, A Bronze Steelyard 36-49. – For references in Byzantine texts on measures, weights, scales and the frauds concerning weighing, see Koukoules, Vios kai politismos, B1, 249-254.



Fig. 9 Marble casket and silver reliquary from the *confessio* of the basilica at Tritēs Septemvriou Street, late fourth century.



Fig. 10 Silver reliquary from Nea Ērakleia, fourth century.



Fig. 11 Stamped lead water pipes, Thessaloniki, 7 Zephyrōn Street, fifth to sixth centuries.

Another aspect of local metalworking illustrates the fact that Thessaloniki, according to the *Notitia Dignitatum* – a document that depicts the administration of the Roman Empire in the late fourth century – was one of the four cities in Illyricum, along with Naissus, Ratiaria and Horreum Margi, where a *fabrica*, a state arms factory was active[114]. The presence of *fabricenses*, military personnel working in *fabricae*, in the city is indicated by an inscription on an early fourth-century sarcophagus[115]. The funerary inscriptions of two gladiators from Thessaloniki, dated between the late second and the early third centuries, which are supplemented with relief decoration, allow a glimpse of a different type of product from the city's metal workshops, that of gladiatorial armour[116]. On these steles, two different types of shields are depicted: a tall rectangular one and another one, shorter and almost square. Both were decorated. The former divided by a wide band into two square fields, each one covered throughout by two intersecting lines forming a large »X«. The latter has oblique sides and at the centre bears a lozenge, which was probably in relief in the original. In addition, two types of helmets are depicted. In the first case, the helmet has a relatively long gorget for the protection of the neck, a visor, and a tall, spiky crest. The second helmet looks heavier, with a short crest, no visor and a wide gorget[117]. Furthermore,



Fig. 12 Bronze steelyard, 75 Agias Sophias Street and 18 Sophokleous Street, first half of the fifth century.

among the presented weapons, a short sword, or dagger, could be considered to have been locally produced. Finally, we should add coining to metalworking activity in the city. The mint of Thessaloniki was active practically throughout the Byzantine period until the fourteenth century[118].

Stoneworking

Sculpture workshops continued to operate in Macedonia and Thessaloniki during the Roman Imperial period[119]. In the second and third centuries, three main types of funeral monument influenced by prototypes from Asia Minor were estab-

114 Notitia Dignitatum, Or. XI, 35-9: »*Fabricae*: …*Illyrici quatuor: Thessalonicensis, Naissatensis, Ratiarensis, scutaria Horreomargensis*« [in (the diocese of) Illyricum four: at Thessaloniki, at Naissus, at Ratiaria, of shields at Horreomargi]. Generally on *fabricae* see James, The *fabricae* 257-330.

115 A certain »[…] ανος στρατ[ι]ώτης ἀναφερόμενος ἐν τῇ εἱερᾷ φάβρικι«, a soldier whose exact name is not handed down (only the ending »anos« is known) registered on the rolls of the workers of the sacred *fabrica*, who managed to buy a marble sarcophagus for himself and his wife Syra. On the aforementioned funerary inscription and *fabricenses* in the city in general, see Sourēs, Rōmaïko ergostasio oplōn 66-78.

116 Nigdelēs, Epigraphika Thessalonikeia 233-236 fig. 46: a banquet scene is sculptured on stele of the gladiator Eurōtas (Εὐρώτας) found in the eastern necropolis, dated to the late second century or the first half of the third century. His tall shield and his helmet are shown at the side. Nigdelēs, Epigraphika Thessalonikeia 236-237 fig. 47: a man in stage costume is depicted standing at the centre of an early third century stele of Korinthiōn (Κορινθίων). In his right hand he holds a sword, while his left hand rests on a helmet, which is placed on top of an almost square shield.

117 For similar examples of helmets see Grant, Gladiators 19, 21. – Junkelmann, Familia Gladiatoria 40-45.

118 On the findings at the site of the city's mint in the Agora (**cat. no. 49**), see Velenēs, To nomismatokopeio 49-60. – Especially on the clay molds for coin blanks found on the site, see Phōtiadou, Pēlines mētres kopēs nomismatōn 183-194. – On the Early Christian coinage of Thessaloniki, see Metcalf, The Copper Coinage of Thessalonica passim. – Oeconomides-Karamessini/Touratsoglou, The 1948 Thessaloniki Hoard 289-312. – Hahn, New Light on the Thessalonican Moneta Auri 178-182. – On two gold bars found in Feldiora, Dacia, stamped in Thessaloniki during the presence of Theodosius I in the city (379-380), bearing an explanatory inscription and the Imperial portraits, see Nigdelēs, Epigraphika Thessalonikeia 482-483.

119 On marble quarries in ancient Macedonia, see Vakoulēs, Latomeia Marmarou. – Vakoulis et al., Marble Quarries 247-257. – For a brief overview of quarrying activities in ancient Macedonia, see Koukouvou, Latomikē drastēriotēta 373-381, with further bibliography.

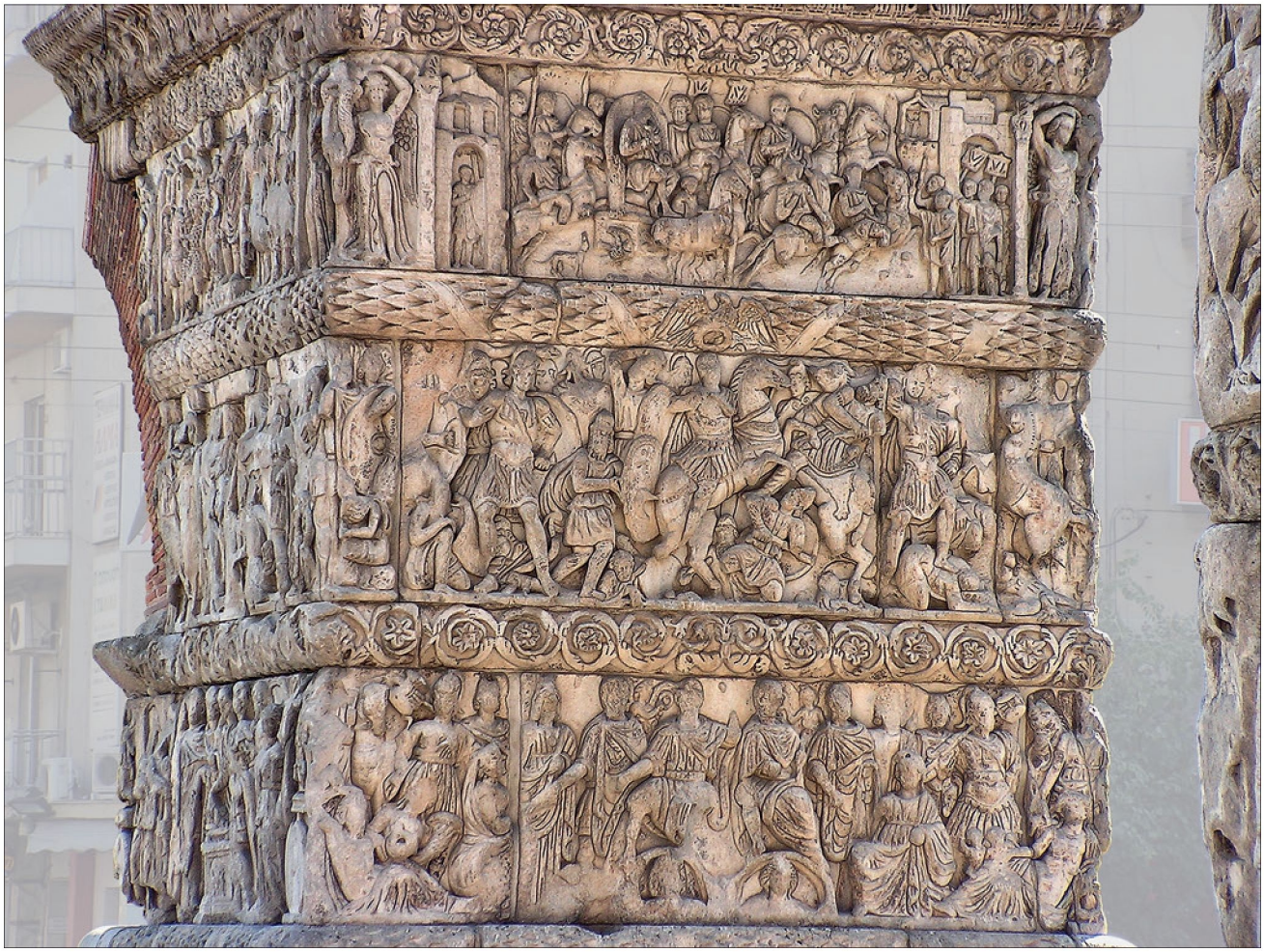


Fig. 13 Galerius' Triumphal Arch, relief of the Persian Campaign.

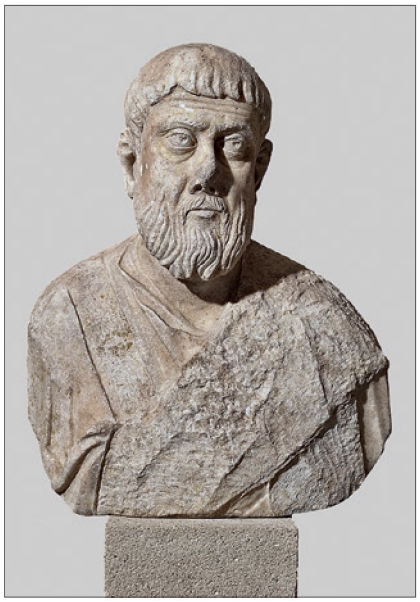


Fig. 14 Marble bust of an apostle or saint, Thessaloniki, Ancient Agora, south stoa (*cryptoporticus*), early fifth century.

lished in the region: rectangular reliefs, monolithic altars and sarcophagi[120]. These are preserved in large numbers. Apart from imported three-dimensional sculpture, e. g. from Attica, it seems that such sculpture was also locally produced. The workmanship ranges from relatively crude to finely executed and the influence of Thassian production is to be noted[121].

After a short interruption around 260-270, we can definitely say that a large sculpture workshop was again operating in Thessaloniki from the early fourth century. This was due to the large-scale building works of Galerius, who had then moved his seat to Thessaloniki. The so-called Small Arch of Galerius and the relief of the Persian Campaign on Galerius' Triumphal Arch (**fig. 13**), among others, have been identified as local products. Roman iconographical elements are combined with those from the Hellenistic tradition, and the co-existence and collaboration of artists from different centres, such as Asia Minor and Attica is evident. In these works, a classicistic tendency is sometimes apparent, while

120 Stephanidou-Tiveriou, Deka aiōnes 348, with further bibliography. – Stefanidou-Tiveriou, The Local Sarcophagi 239-302. – Stephanidou-Tiveriou, Agalmata mousōn 73-122. – Stefanidou-Tiveriou, Mounted Horseman 142-171. – Stephanidou-Tiveriou, Trapezophora. – Stephanidou-Tiveriou, Mikro toxo. – For a concise presentation of sculptures from the city, see also Adam-Velenē, Theamata kai technes 263-282. – Especially on Roman altars found in Thessaloniki and the wider region, see also Adam-Velenē, Makedonikoi Vōmoi passim.

121 Stephanidou-Tiveriou, Deka aiōnes 349-350, with further bibliography.



Fig. 15 Unfinished marble capital, Hagios Dēmētrios Thessaloniki, seventh century.

in others Late-Antique anti-Classicistic elements are visible, as for instance in the Theodosian bust (late fourth century), which was made out of the re-working of a third-century *togatus*. As it was found near a Christian chapel, it has been assumed that it might represent an apostle or saint[122] (**fig. 14**). It has been argued that some of the rich and diverse sculptural decoration of the Early Christian monuments was executed locally[123]. What can be securely attributed to local production consists of a group of four, small-size, truncated, conical, seventh-century capitals. This is due to the fact that an identical, unfinished capital has been used in the Saint Dēmētrios Basilica during renovation in the seventh century[124] (**fig. 15**). It thus appears that a local sculpture workshop was active in Thessaloniki until the middle of the seventh century, which was, as has been noted, open to Constantinopolitan influence whilst also keeping alive the Hellenistic tradition[125] (**fig. 16**). A small and unfinished capital (dated to the second half of the fifth century or the first half of the sixth century) found in the excavation of a church on the west side of the city also appears to have been a local product[126]. We might also consider simple creations, such as marble boxes for *enkainion* reliquaries, to have been produced locally[127] (**fig. 9**). In addition, simple works, such as the mortars, or at least their carving, are probably produced

122 Laubscher, Der Reliefschmuck esp. 145f. – Stephanidou-Tiveriou, Trapezophora 21-22. – Stephanidou-Tiveriou, Mikro toxo 83-96. – Stephanidou-Tiveriou, Deka aiōnes esp. 348-350. – For the male bust, see Despoinēs/Stephanidou-Tiveriou/Voutyras, Katalogos, vol. 2, no. 308 (G. Despoinēs). – Cat. New York 2011, 84-85 no. 11 (K. Tzanavari).

123 For instance, even the ambo of the Rotonda, which shows the Adoration of the Magi, has been ascribed to a local workshop: Spieser, L'ambon de la rotonde Saint-Georges 498, 510. – An aspect of the work of the local sculptors is identified in the Roman *spolia* that have been re-carved and used in Early Christian monuments of Thessaloniki, e. g. in the mid-fifth-century Acheiropoiētos Basilica where inscribed pieces of Roman sarcophagi were used as imposts of pilasters: Raptēs, Paratērēseis 226-229. The original sculptures were cut and carved appropriately, but on their upper, invisible sides the inscriptions were left intact. Similar examples are kept, according to Raptēs, Paratērēseis 229, 231, in the lapidarium of the Ephorate of Byzantine Antiquities of Thessaloniki. – Furthermore, at least three of the limbers of the apse of the Acheiropoiētos Basilica also present reworked parts of a Roman architrave, idem 230-232. – On local and imported capitels found in Thessaloniki, see Mauropoulou-Tsioumē/Papanikola-Bakirtzē, Kionokrana, vol. 1, 11-38. – Mauropoulou-Tsioumē/Papanikola-Bakirtzē, Kionokrana, vol. 2, 218-236. – Mentzos, Korinthiaka kionokrana passim. On a sixth-century dosseret from Thessaloniki, which was re-carved and re-used as the mouth of a well until relatively recently, see Papanikola-Bakirtzi/Tzitzibassi, The »Ups and Downs« 40-44.

124 Velenēs, Tessera prōtotypa kionokrana 669-679.

125 Velenēs, Tessera prōtotypa kionokrana 678.

126 Makropoulou, Dyo prosphata anakalyphthentes naoi 713. – Cat. Athens 2002, 66 no. 8 (D. Makropoulou).

127 For a simple square marble cascet from the *enkainion* of the fourth-century basilica at Tritēs Septemvriou Street see Kourkoutidou-Nikolaidou, Enkainio vasilikēs 70-81. – Makropoulou, Palaiochristianikos naos 25-46 esp. 30 pl. 6b, 7a. – For a fifth-century marble reliquary (in the form of a small sarcophagus with holes in its lid and lower part to facilitate the pouring of oil through it to sanctify it by contact with the reliquary's sacred contents) from the *engainion* of a ninth-century church in the centre of the city, see Euangelidēs, Eikonomachika mnēmeia 342-343 figs 2-3. – Tzitzibassi, A Marble Reliquary 26-43, with prior bibliography.



Fig. 16 Unfinished marble capital, Thessaloniki, Basilica at Agiou Dēmētriou Street, second half of the fifth century to first half of the sixth century.

locally throughout the Roman and Early Christian period[128]. Finally, hundreds of funerary stele, most of them bearing simple inscriptions or simplified representations, bear witness to the self-evident, but provable, continuous presence of sculptors in the city[129]. The archaeological evidence, such as it is, for the actual location of marble workshops is found in the areas of the western and eastern necropolises[130].

Mosaics

The surviving mosaic pavements of luxurious private and public buildings, as well as the wall decorations of churches and houses (**fig. 17**), indicate that a local school of mosaicists was active, one with very intense Hellenistic elements in their themes and in the way in which these were rendered[131]. Thousands of square metres of wall mosaics have been preserved in the Rotonda[132], the Acheiropoiētos[133], the Hagios Dēmētrios[134], and the Latomou Monastery[135], as well as in



Fig. 17 Wall mosaic in Hagios Dēmētrios with Saint Dēmētrios and the founders of the church, seventh century.

other buildings[136]. These are probably only a fraction of the wall mosaics that once existed in Thessaloniki.

The surviving mosaics still preserve an overview of the prevailing themes and artistic styles in use from the early fourth to seventh centuries. The early mosaics express an idealistic naturalism rendered with a variety of colours and nuances, which becomes gradually less pronounced in the later examples, which are more rigid, presenting relatively simple and well-defined themes rendered with fewer colours. In most of the monuments, nuances of yellow, green and blue as well as gold and silver hues are rendered with glass tesserae[137].

128 On mortars from Thessaloniki, see Tzitzibassi, Marble Bowls 18-25, 26-29.

129 For funerary stele and inscriptions in general from Thessaloniki, see Edson, Inscriptiones Thessalonicae. – Spieser, Inventaires I 145-180. – Spieser, Inventaires II 303-348. – Tsigaridas/Loverdou-Tsigarida, Katalogos 33-78, 87-91, 99-100. – Feissel, Recueil des inscriptions 81-240. – Tzitzimpasi, Epitymvies epigraphes 169-208.

130 For the finds in the western necropolis located at 20 Margaropoulou Street, see Makropoulou, Taphoi kai taphes 225 (**cat. no. 105**). – The finds in the eastern necropolis were located at 72 Akropoleōs Street: Makropoulou, To ergo (**cat. no. 106**).

131 Asēmakopoulou-Atzaka, Syntagma tōn palaiochristianikōn psēphidōtōn III.1 passim. – Nikonanos, Topographia kai Technē 247.

132 Torp, Mosaikkene. – Kleinbauer, The Iconography and the Date 27-107. – Sōtēriou, Provlēmata eikonographias 191-204. – Gounarēs, Eortastikai epigraphai 201-226. – Kourkoutidou-Nikolaidou/Tourta, Peripatoi 48-69. – Kourkoutidou-Nikolaidou/Mauropoulou-Tsioumē/Bakirtzēs, Psēphidōta Thessalonikēs 48-127. – Bakirtzis/Mastora, Mosaics in the Rotunda 33-45. – Mastora, Psēphidōtos diakosmos 83-107, with all prior bibliography.

133 Xyngopoulos, Peri tēn Acheiropoiēton 472-487. – Bakirtzis, Sur le donateur 37-44. – Kourkoutidou-Nikolaidou, Acheiropoiētos. – Kourkoutidou-Nikolaidou/Tourta, Peripatoi 185-195. – Kourkoutidou-Nikolaidou/Mauropoulou-Tsioumē/Bakirtzēs, Psēphidōta Thessalonikēs 196-237. – Fourlas, Die Mosaiken der Acheiropoietos-Basilika 8-109, 196-209, 230-358. – For a new approach, attributing the mosaics of the upper galleries to a second, late-seventh to early-eighth-century renovation, see Raptis, The Mural Decoration 101-114.

134 Cormack, The Mosaic Decoration 16-52. – Xyngopoulos, Psēphidōta. – Papazōtos, To psēphidōto tōn ktētorōn 365-375. – Bakirtzēs, Vasilikē Agiou Dēmētriou. – Kourkoutidou-Nikolaidou/Mauropoulou-Tsioumē/Bakirtzēs, Psēphidōta Thessalonikēs 128-179.

135 Xyngopoulos, To katholikon, 142-180. – Gerke, Il mosaico absidale 179-199. – Gkioles, Eikonographikes paratērēseis 83-94. – Spieser, Remarques complémentaires 295-306. – Kourkoutidou-Nikolaidou/Tourta, Peripatoi 91-99. – Kourkoutidou-Nikolaidou/Mauropoulou-Tsioumē/Bakirtzēs, Psēphidōta Thessalonikēs 180-195.

136 A round building on the upper part of the city on 6-12 Aiolou Street: Cat. Thessaloniki 2004, 8. – Another example, imitating a multicoloured gemmed chain/band, was found in an Early Christian urban villa excavated at Prasakakē and Koukouphlē Streets, unpublished find in the Museum of Byzantine Culture. An identical gemmed band was discovered on the southern façade of the Apsidal Building north of the palace of Galerius, see Athanasiou et al., To entoichio.

137 On a recent, brief presentation of these mosaics, with all further bibliography and especially on the use of glass in them, see Antonaras, Production and Uses of Glass 189-198.



Fig. 18 Mosaic pavement, Thessaloniki, 7 Lapithōn Street, *triclinium*, second half of the fifth century.

The mosaic pavements are covered with purely geometrical themes, occasionally covering wide areas with a continuous decoration based on a repeated motif, or occasionally having the decoration divided into large, uneven fields, or in circular compositions.

Similarities in their overall decorative effect, particular motifs and techniques suggest that there was an active workshop of mosaicists in Thessaloniki. They most probably began working on the buildings of Galerius, creating a tradition that continued throughout the fourth century and up to the early fifth century[138]. Thessaloniki's fifth and sixth-century mosaic pavements are characterised by a greater iconographic diversity, polychromy, use of composite motifs, and possibly also by the use of zoomorphic compositions[139].

Local artisans also produced technically and decoratively simple mosaics, single or two-coloured ones, plain or simply decorated, made with asymmetrical marble or stone tiles. These mosaics appear in all kinds of buildings from the late fourth century to the sixth century in Thessaloniki, in Macedonia and in the wider Balkan region, and it seems that they represent an aesthetic choice and not a mere economic decision[140]. An example with both types of mosaic pavements used in a single room was unearthed in an opulent and spacious *triclinium* with wall paintings. The apsidal part of the room, which was used for dinning and thus mostly covered by couches and tables, was paved with a simple, crude mosaic. The larger, rectangular part of the room was covered by a fine mosaic rendering elaborate, polychromatic geometrical



Fig. 19 Mosaic pavement, detail with the names of the owners, Thessaloniki, 7 Lapithōn Street, triclinium, second half of the fifth century.

motifs and even the names of the owner, Eusebios, and his family, Markia, Helladitēs and Klēmentinē, in a *tabula ansata* frame[141] (**figs 18-19**).

Wall Painting

The activity of painters, particularly those engaged in the production of wall-paintings, in Late Roman and Early Christian Thessaloniki is mainly evident from the dozens of wall-painted tombs that are still preserved in both necropolises of the city[142]. Forced by their own fresco technique, mural painters needed to work with swift movements, in some cases first drawing the main outline of the figures roughly on the wet plaster. In this way they created a basic guideline for

138 Asēmakopoulou-Atzaka, Ta palaiochristianika psēphidōta dapeda 407-408. – Asēmakopoulou-Atzaka, Syntagma tōn palaiochristianikōn psēphidōtōn III.1, 112-113.

139 Asēmakopoulou-Atzaka, Syntagma tōn palaiochristianikōn psēphidōtōn III.1, 156-157.

140 Guidobaldi/Guiglia-Guidobaldi, Pavimenti marmorei 252-254 esp. nt. 466. – Asēmakopoulou-Atzaka, Syntagma tōn palaiochristianikōn psēphidōtōn III.1, 168-176 esp. 168.

141 Kourkoutidou-Nikolaidou, Lapithōn 7, 323. – Eleutheriadou, Lapithōn 7, 332 pl. 151β. – Asēmakopoulou-Atzaka, Syntagma tōn palaiochristianikōn psēphidōtōn III.1, 258-259. This fifth-century *triclinium* from 7 Lapithōn Street is exhibited in the Museum of Byzantine Culture. The inscription in capital letters reads εὐτυχῶς Εὐσεβίῳ εὐτυχῶς Μαρκίᾳ εὐτυχῶς Ἑλλαδίτῃ καὶ Κλημεντίνῃ.

142 For an early Roman burial monument (most probably from the first century AD) with wall paintings imitating marble slabs and intarsio decoration, see Tsimpidou-Avlōnitou/Galinikē/Anagnōstopoulou, DETH kai archaiotētes 220-224 fig. 15. – Gounarēs, Toichographies taphou ar. 18, 245-262. – Nikonanos, Topographia kai Technē 245-246, considers the connections between Thessalonian mural paintings and those from the catacombs of Rome, and the unity and universality of art in that period.

the composition of their brush work. A rare example of such an incised outline on wet plaster is still visible in the funerary mural painting of Susannah and the Elders from the first half of the fifth century AD[143] (**fig. 20**). The use of incised draft outlines is known in the Macedonian region from at least the middle of the fourth century BC. We see styles ranging from the free, even careless way, employing deep, thick lines, used in the paintings of the Rapture of Persephone in Vergina and in the Early Christian painting of Susannah, as well as in an accurate and very fine way, as in the mural painting of the Royal Hunt in the grave of King Philip in Vergina[144].

It has been stated that in mural paintings in Late Roman and Early Christian tombs in Thessaloniki, when an outline is observed it was always rendered by engraved lines and never by painted ones[145]. However, a closer inspection of the dozens of painted burial murals that are kept in the Museum of Byzantine Culture reveals that incised outlines were only used in exceptional cases. Actually, incised outlines, apart from the human figures in Susannah's panel, were only observed in two other cases where a wide incision was used to form perfect circles, probably with the use of callipers.

The iconography of the paintings in general is rich, quite diverse and skilfully executed[146]. Garlands, architectural and linear motives, imitations of incrustations, Christian symbols, paradisiac and biblical scenes appear in the third, fourth, and even in the early fifth centuries. Depictions of the cross, occasionally flanked by trees or shrubs, prevail from the fifth to the seventh-eighth centuries and gradually become the only symbol used in the graves[147]. The funeral murals were executed predominantly from a palette of only four colours – red, black, white and green – although in some cases red alone was used to render an entire motif. In a few important tombs additional colours, e. g. yellow and light blue, were used and the background was rendered with ochre to create a rich, polychromatic depiction[148].

Few of the mural paintings that once decorated churches[149] and the houses of the wealthy in Thessaloniki have been preserved (**fig. 21**). With the single exception of the representation of a row of hanging hare skins from a second-century villa (**fig. 22**) the extant paintings from secular buildings are exclusively geometrical patterns, rendering in an inexpensive way incrustations and *opera sectilia* prototypes. Such ornamental decorations were apparently the work of less skilful *pictores parietarii,* who were twice as cheap as compared to the *pictores imaginarii* who would be called upon to execute the figural scenes[150]. The colours used were red, black, green, white and yellow[151]. In all probability the fact that only the lower parts of walls are preserved explains the simplicity or the relative uniformity of the motifs in the mural paintings. One would expect more elaborate, figural themes to be rendered on higher parts of the walls, which are not preserved. The lower parts were apparently covered with simpler geometrical patterns of polychrome marble slabs that reflected the arrangement of the real marble wall revetments in sumptuous public and private buildings of the city, such as the Galerian Palace (e. g. the octagonal throne room, the Civil Basilica and the Rotonda), the basilica under Hagia Sophia, or the private house at 6 L. Iasonidou Street[152].

143 On the mural painting of Susannah, see Mauropoulou-Tsioumē, Parastasē Sōsannas 247-258. For a presentation of the painting in English with a colour illustration, see Cat. Athens 2013, 71, no. 17 (E. Angelkou).

144 Saatsoglou-Paliadelē, Vergina 38-40.

145 Markē, Nekropolē Thessalonikēs 122.

146 Markē, Nekropolē Thessalonikēs 240-241.

147 Markē, Nekropolē Thessalonikēs 120-240.

148 Markē, Nekropolē Thessalonikēs 123.

149 For parts of the wall paintings of a fourth-century building under the Hagia Sophia presenting a colonnade and polychrome marble plaques, see Kalligas, Anaskaphai Agias Sophias 79-80 fig. 5. – Brownish and greenish imitations of five marble slabs with lozenges in them are painted at the lower part of the apse, below the mosaic decoration, at Latomou monastery: Tsigaridas, Monē Latomou 25 nt. 3, illus. 2, 54-55 fig. 12. – For a small painted figure depicted in the southern upper gallery of the Acheiropoiētos Basilica, see Kourkoutidou-Nikolaidou/Tsioumē, Acheiropoiētos 241-242 pl. 106e. – Raptis, The Mural Decoration 101-114, where it is dated to the late seventh to early eighth centuries.

150 Diocletian's Edict of Maximum Prices 7.8-9, issued in 301 AD, stipulating the wage of the former at 70 denarii and of the latter at 150 denarii. – For an overview on Roman arists, art and painting in particular, see Stewart, Roman Art chap. 2 on *Art of the House and the Tomb*, ibid. 29 for the distinction between the two groups of painters and their wages. – Also Clarke, Art in the Lives of Ordinary Romans 237.

151 For first-century villas on the site where Galerius' palace was erected (richly decorated with mosaic and intarsia pavements, stucco and wall paintings imitating geometrical, intarsia patterns rendered with red, green, yellow, white and turquoise colours; destroyed by fire in the middle of the third century), see Karamperē, Metallagē figs 4a, 4b; Karamperē/Christodoulidou, Diachronikotēta 394-396 figs 2a, 2b. Dr Karamperē is currently preparing a publication on another wall painting from one of the aforementioned villas, which presents an unusual theme: the red background at its lower part has two horizontal bands, a thinner white one and a wider blue one. Above these bands it is divided into two rows of equal squares made by straight, fine, black, leafy bunches or cords. The middle of each side of the square is accentuated by a white ribbon tied in a large bow or knot. Each square is filled with the stretched skin of a spotted, brownish-yellow hare arranged head upright with the characteristic long ears of the animal clearly rendered, illustrated at Karamperē/Christodoulidou, Galeriana erga ypodomēs figs 3, 5-6, and in Athanasiou/Karamperē, The Palace 5. – For a house at 18 Makedonikēs Amynēs Street, with an early Imperial layer of painting in Pompeian style and a late Imperial layer imitating an opus sectile, see Cat. Thessaloniki 2001, 13. – For a Roman Imperial period house at 7 Zephyrōn Street, with wall painting imitating an opus sectile see Cat. Thessaloniki 2001, 7. – For a rich house at Dragoumē and Palaiologou Street with wall paintings imitating marble incrustations, dated to the period between mid-third and mid-fourth centuries, see Pazaras, Nees toichographies 155-166, where older similar finds from Thessaloniki are noted among the others at: 1. Palaiologou and Armenopoulou Street; 2. 94 Egnatia Street; 3. Agiou Dēmētriou and Sophokleous Streets. – For a fourth-century house with wall paintings imitating intarsia supplemented with floral elements, and architectural elemens, such as a fluted column on an ionic base, see Cat. Athens 2002, 268, no. 264 (E. Markē). – For a fifth-century house, found at 7 Lapithōn Street, with rich mosaic pavement and wall paintings, exhibited in the Museum of Byzantine Culture, see Kourkoutidou-Nikolaidou, Lapithōn 7, 323. – Eleutheriadou, Lapithōn 7, 332 pl. 151β. – Asēmakopoulou-Atzaka, Syntagma tōn palaiochristianikōn psēphidōtōn III.1, 258-259. – For a sixth-century house with wall paintings of geometrical patterns, wall mosaics and mosaic and opus sectile pavements, see Markē/Kommatas, Iasonidou 6 esp. 333 fig. 10. – For a fifth-century house with two phases of wall paintings (a simpler fifth-century phase imitating multicoloured slabs; and a more elaborate fifth or sixth-century phase imitating intarsia decoration), see Karydas, Anaskaphes Glaukou 251-252 fig. 6.

152 Smaller parts of the marble revetments or the system of their attachment to the masonry of these monuments are still visible on site. On the octagonal room and the bath of the Palace, see Athanasiou et al., Diakosmēsē Oktagōnou 255-267, with further bibliography. On the wall revetments of the Civil Basilica, see Athanasiou et al., Vasilikē Galerianou 118-119 illus. 4. – On the wall revetments of the Rotonda, see Theocharidou, Rotonta Thessalonikēs 67-68 fig. 13. – On the wall of the apse of the basilica under Hagia Sophia, see Pelekanidēs, Mesaiōnika pl. 311. – For the house at 6 L. Iasonidou Street, see Markē/Kommatas, Iasōnidou 6, 327-336.



Fig. 20 Funeral wall painting with Susannah and the Elders, necropolis of Thessaloniki, fifth century.



Fig. 21 Wall paintings, Thessaloniki, 7 Lapithōn Street, *triclinium*, second half of the fifth century.



Fig. 22 Wall paintings, Thessaloniki, Roman villa under the Galerian Palace, second century.

A different form of pictorial work, which is rarely preserved, probably because of its ephemeral character, has been discovered in the Roman Agora of Thessaloniki. It is a series of five marble slabs with inscriptions of *philotimiae*, i.e. invitations to wild animal hunts (κυνηγέσια) and gladiatorial contests (μονομαχίαι), which are precisely dated to 259 AD. On one of the slabs, apart from the inscribed text, painted decoration is preserved. This decoration illustrates the contests with depictions of gladiators in diverse types of armour fighting in pairs or with wild animals, figures leading the animals to the arena, and isolated figures of men or animals[153]. The painting has been executed in the ancient Greek

153 For the inscriptions, see Velenēs, Epigraphes apo tēn Archaia Agora. – Nigdelēs, Epigrafika Thessalonikeia 73-93.

four-colour palette, i.e. *tetrachromy* (using red, black, yellow, white and their nuances), supplemented with gold leaf. The shading and the perspective are rendered properly, and the figures were painted directly by the brush without any prior outline incisions, demonstrating the technical skilfulness of the artist. The work seems to have been done in the technique of *al secco* and the figures are successfully depicted naturalistically, while the surroundings have only been slightly depicted[154]. The activity of painters is also attested by a group of painted Roman painted marble bases.

Textile Production

The number of different categories of artisans and traders involved with textiles and clothing has only been partly documented in Thessaloniki[155]. The use of different types of textiles for clothes and other domestic uses has been traced archaeologically[156] and found in written sources, which also make reference to textiles used for the decoration of houses and even the defence of the city[157]. Furthermore, a sixth-century funerary inscription of a *himatiopratēs* (ἱματιοπράτης), a draper, presents additional firm evidence for this activity in the city[158].

Textile dyers and, more specifically, purple dyers were active in Thessaloniki from the first century BC onwards[159]. An association of *porphyrovaphoi* (πορφυροβάφοι), purple dyers, was active in Roman times, called *tēs oktōkaidekatēs* (τῆς ὀκτωκαιδεκάτης), »the one of the eighteenth [Street]«, indicating their location and distinguishing them from other relevant associations in the city[160]. An example of the work of some of these purple dyers might be the purple gold-weft dress that was found in an undecorated lead coffin in a marble sarcophagus from the eastern necropolis (dated to the fourth century)[161].

Finally, thread or fabric dyeing activity has been detected in the area of the shops on the street south of the Agora, which hosted workshops in the fifth century[162], as was also detected in the upper part of the city, west of Hagios Dēmētrios[163].

Tanning

Tanneries are usually identifiable by the presence of liming pits used for swelling and softening hides, and by water tanks used for washing the hides after being dehaired with lime and bathed in bate. In the same tanks or leaching pits, tanning would be undertaken using material such as acorns, pinetree bark, pinecones, chestnuts, etc. Tanneries needed a continuous water supply during the tanning process, especially deliming. Consequently, this meant that tanneries were located next to a river or spring, or in a quarter where the piped water system was reliable.

The frequent re-use of urban space in Thessaloniki means that only small areas have remained undisturbed, thus, the archaeological picture of tanning is a fragmentary one with only parts of the pits and tanks preserved. Furthermore, since most of the tools were made of wood, the only movable finds that give evidence to tanning are the remains of fleshing knives, the long, curved, double-handed knives with which the tanner would scrape the inner side of the hide. The activity of tanners and dyers, unwelcome within the city, has been located on the south side of the Ancient Agora, where a series of shops are arranged in front of a *cryptoporticus*, i.e. a covered vaulted corridor that supports the southern side of the Agora[164]. In

154 Adam-Velenē, Invitatio 308 nt. 108. These bases are kept in the Archaeological Museum of Thessaloniki. Another unpublished group of similar works, painted marble bases from an excavation in Thessaloniki, will soon be published, giving extra evidence for this specialised type of pictorial activity in Thessaloniki of Roman times.

155 A sixth-century weaving workshop was identified in Dēmokratias Square during the excavation for the metro station's shaft, see Paisidou/Vasiliadou/Kōnstantinidou METRO 2010 (**cat. no. 104**). Dyeworks have been identified in some of the shops on the commercial street at the southern side of the Agora (**cat. no. 79**).

156 Antonaras, Early Christian Gold-embroidered Silks 45-47, on silk, gold and silver embroidered, gold interwoven and laced vestments. A larger part of a purple, gold-weft dress is exhibited in the Archaeological Museum of Thessaloniki, see Vokotopoulou, Odēgos Archaiologikou Mouseiou 88 and fig. on p. 89. – Tzanavari, An Example 25-34. Linen and probably woollen threads, or their prints, have been unearthed in several Early Christian tombs. They are usually coated with bronze oxides (the key factor for their preservation) due to their long-time contact with bronze objects, e.g. coins or jewellery. These are mostly unpublished finds kept in the depots of the Museum of Byzantine Culture and the 16th Ephorate of Prehistorical and Classical Antiquities.

157 Bakirtzēs, Agiou Dēmētriou Thaumata 1:14 §152: »ἐβουλεύσαντο πρὸς τῶν ἐπάλξεων ἀρτῆσαι ἐκ ῥάβδων λεπτῶν ὥσπερ τινὰ καθυφασμένα καταπετάσματα, καὶ τὰς ἐν τοῖς δειπνηστηρίοις ὑπὸ τοὺς δαιτυμόνας τιθεμένας ἐκ παπύρου καὶ σάκκου στρωμνάς« [So they thought to hang before the ramparts from narrow rods like a sort of woven curtains, both banqueting mattresses made of papyrus and goat-hair sackcloth]. Bakirtzis, Imports, Exports and Autarchy 94, 98. – On curtains in Byzantium and their representation in art, see Parani, Reconstructing 179-184, with bibliography. – On bedding equipments and mattresses see Parani, Reconstructing 176-179. – Koukoules, Eustathiou Iaographika 82-87.

158 Edson, Inscriptiones Thessalonicae 231 no. 795. – Feissel, Recueil des inscriptions 141 no. 157.

159 See **cat. no. 77** for a workshop located at Nauarinou Square, dated from the second or first century BC to the first century AD. – Late Roman and Byzantine workshops related to textile dyeing from Greece and the technology their operation involves are discussed in Raptēs, Ergastēria, 132, 134-136, 311-314.

160 Edson, Inscriptiones Thessalonicae 117 no. 291. For comments on the inscription, see Robert, Etudes anatoliennes 535 nt. 3. – Vitti, Poleodomikē exelixē 78-79. – Indications of fifth-century purple dyers' activity has been archaeologically located at the western part of the city, north of Chrysē Gate at 7 Zephyrōn Street (see in **cat. no. 47**), see Markē, Zephyrōn 7, 587.

161 A find from the 1960s illustrated at Vokotopoulou, Odēgos Archaiologikou Mouseiou 88 fig. on p. 89, published in Tzanavari, An Example 25-34. – Moulhérat/Spantidaki, Les tissus 35-48. The cloth was covering a fourth-century, blonde-braided Thessalonian woman who was buried in a plain lead coffin, placed in a large marble sarcophagus, in the north part of the eastern necropolis of Thessaloniki.

162 Valavanidou, Ergastēriakes chrēseis 128-129. On natural dyes and medieval pigments see Guineau, Glossaire passim.

163 Excavation at 75 Agias Sophias Street. The installation is dated to the fourth or early fifth centuries, see Karydas, Anaskaphes Agias Sophias 75, 252-254 figs 3-4 (**cat. no. 78**).

164 On the architectural remains of Roman tanneries, see Adam, Roman Building 326-327. – On leather and the technology of its processing, see Forbes, Studies in Ancient Technology, vol. 5, 1-79. – On this lowly social profession, one of the *banausoi* in Byzantine sources, see Koukoules, Vios kai politismos, B1, 188-189. Also Kazhdan, Tanner 2010. – On Late Roman and Byzantine tanneries found in excavations in Greece, see Raptēs, Ergastēria 133-135, 302-311.

the fifth century, these premises were used as workshops due to their location on a commercial street with easy access and connection to the city's sewage system. From archaeological finds, such as water reservoirs, lime remains, and fleshing knives, some of them have been identified as thread dyeworks and tanneries[165]. Two more tanneries dated roughly to the fourth century and to the sixth to seventh centuries, respectively, have been excavated close to the eastern city walls[166].

Another aspect of the city's leather trade in the fifth or sixth century is shown by a partially preserved edict inscribed on the eastern part of the city walls. This edict refers to restrictions on the import of tannage and the penalties imposed upon those breaking the law. It is also possible that the edict demonstrates the presence of a relevant professional association or guild engaged in this trade in the city[167]. As to the products of these tanners, only a few partly preserved shoes have survived the deteriorating soil conditions of Thessaloniki to be attested archaeologically, demonstrating this apparently widespread and utilitarian use of leather in Roman and Early Christian Thessaloniki[168].

Bonecarving

No ivory finds have been excavated at Thessaloniki and only a few objects made of antler and bone have been found. Almost all of the finds are relatively simple pieces such as chess pawns, dice, needles, beads, spoons, pins and combs. Exeptional are the fragments of two small chests (hitherto unpublished), decorated with what seem to be colonnades and human figures carved in high relief and even partly in the round. Some of these might be local products, since bone carving was a relatively easy and seemingly widespread craft[169]. Yet, bone carving has left few remains in Thessaloniki, and the main area where indications for the presence of a workshop have been located is the site of the Ancient Agora. In the excavations conducted in this area, a large quantity of raw and partly worked bones, in conjunction with some bone objects, were found, indicating the operation of a bone carving workshop on the site. The products of the Agora's bone workshop included tools, jewellery, decorative furniture-fittings, clothing accessories, bottoms, figurines, knife and sword-hilts, musical instruments, needles, writing utensils, dice, partly smoothened knucklebones and game counters[170].

At two more sites in the upper part of the city, large numbers of unfinished or finished but broken bone finds were unearthed, indicating the locations of bone carving in the Late Roman or Early Christian period. Bone pins, *styli* and *spatulae* in different stages of preparation were excavated in the north-eastern part of the city on a side-street of Antiochou Street[171]. Two blocks to the south-west, at the juntion of Olympiados and Sakellariou Street, around sixty bone implements, pins, needles and two spoons were found, almost all of them broken and some in a partially finished state. At least four of the pins (globular headed), and nine needle-shafts (oval in cross-section) and pins (circular in cross-section) were unfinished, indicating that they were made on-site or in a nearby workshop[172].

Woodworking

The earliest indication for an artisan involved in woodworking, a *zygopoios* (ζυγοποιὸς), i.e. a yoke maker, Artemōn, is dated to 159/160[173]. After a long period of silence, the next surviving piece of textual evidence comes from a funerary inscription mentioning the *Leptourgos Heliodōros* (Λεπτουργὸς Ἡλιόδωρος), who died in the city sometime in the fifth century[174] (**fig. 23**). Despite the paucity of evidence, the activity of woodworkers in Thessaloniki should be considered self-evident.

165 Vitti, Poleodomikē exelixē 102-103. – Valavanidou, Ergastēriakes chrēseis 128-129 (**cat. no. 84**).

166 For the plot at 2 Sophokleous Street, see Cat. Thessaloniki 2003a, 12 (**cat. no. 83**), and for the plot at 18 K. Melenikou Street, where, among others, two large lime pits have been unearthed, see Cat. Thessaloniki 2005, 6 (**cat. no. 85**).

167 For the most recent reading and corrected version of this inscription, see Feissel, Recueil des inscriptions 84-86 no. 85, with all prior bibliography.

168 For a general overview of Roman footwear, see Goldman, Roman Footware 101-130. For shoes and/or hobnails from shoes from different necropolises of Thessaloniki and the surrounding region, see Chrysostomou, Archaia Edessa 210 no. 476, 232 no. 551, 234 no. 566, 240 no. 589 fig. 86, 245 no. 608, 248 no. 629, 251 no. 632, 252 no. 642, 259 no. 704, 263 no. 728, 273 no. 784, 285, no. 825. – Malama/Darakēs, Nekrotapheio 435. – Other finds from Thessaloniki include: Petsas, Archaiotētes kai mnēmeia 349. – Cat. Athens 2002, 113 no. 106 (D. Makropoulou). – Nalpantēs, Anaskaphē sto oikopedo 140-141 pls. 49, 50, 303. – Makropoulou, Taphoi kai taphes 388-389. – Pazaras, Anaskaphikes ereunes 149, 179. – Antonaras, Calyx-shaped Glass Lamp. – Ignatiadou, Evraïkē mageia.

169 For a general overview on bone and ivory carving in the Graeco-Roman world, see St. Clair, Carving as Craft 18-32. – For a recent overview on finds and workshops from Alexandria, see Rodziewicz, Bone and Ivory Carvings from Alexandria passim. – For finds from Thessaloniki, see Cat. Athens 2002, 210, 410, 468 nos 239, 498-501, 504 (N. Karydas), 637-638 (I. Motsianos), 639 (A. Antonaras), 640 (D. Makropoulou). Several other examples are presented in the permanent exhibition of the Museum of Byzantine Culture and in the Archaeological Museum of Thessaloniki, and even more are kept in storage.

170 Valavanidou, Ergastēriakes chrēseis 127 (**cat. no. 101**). An entire showcase in the Archaeological Museum of the Ancient (Roman) Forum, Thessaloniki, is filled with the finished products and refuse of this workshop. The workshop will be published by Dr P. Adam-Velenē.

171 Makropoulou, Antiochou 8-10, 695 (**cat. no. 102**).

172 Eleutheriadou, Olympiados kai Sakellariou 387-391 (**cat. no. 103**).

173 Nigelis, Voluntary Associations 23, 41, inscription 27, with prior bibliography. Artemōn the yoke maker is mentioned in the funerary inscription of *Krēskēs* (Κρήσκης), dated to 159/60; he was the head (ἀρχισυνάγωγος) of the association of *Herō Aulōnitēs* (συνήθια Ἥρωνος Αὐλωνίτου), Terzopoulou, Amaxes 301-302, with all prior bibliography.

174 Edson, Inscriptiones Thessalonicae no. 787. – Tsigaridas/Loverdou-Tsigarida, Katalogos 73 no. 43, with further notes on the term *leptourgos*. – Cat. Athens 2002, 68 no. 11 (A. Tzitzibasi). – For another funerary stele, that of Sōtērichos set up by his wife Ioulianē with money from their joint labour, which bears engraved depictions of several tools on its lower part, such as a saw, hammer and axe, indicating his profession as probably that of a carpenter or a butcher, see Edson, Inscriptiones Thessalonicae 249, IG.X.2.1. 877. Its exact find site is not known, but it can be assumed that it was found in Thessaloniki. I thank Prof. P. Nigdelis for pointing out the inscription to me.

Wine Production

The evidence for wine production in the area is scarce, but we know that it existed because vineyards are explicitly mentioned in Thessalonian inscriptions[175]. A wine reservoir was unearthed in the excavation of a fifth-century country villa at Palaiokastro, west of Thessaloniki[176]. Also, it has been noted that a quadrangular burial monument in the eastern necropolis was re-used for wine making after being destroyed in the Early Byzantine period[177].



Fig. 23 Funeral inscription of Heliodōros Leptourgos, necropolis of Thessaloniki, fifth to sixth centuries.

175 For the production of wine and oil in the Mediterranean in general, see Amouretti/Brun, La production passim, where a very wide array of archaeological finds and issues concerning these productions are met. – A useful collection of papers on the topic are included in the book of proceedings of the conference *Istoria tou Ellēnikou Krasiou*. – For an overview of presses and other finds related to wine production in Greece see Raptēs, Ergastēria 103-122, 263-283. – For a reference to a vineyard of two *plethra* that was donated by the priestess Euphrosynē to the *thiasos* (θίασος) of Prinophoros in the third century, on condition that its annual revenue would be used to offer a sacrifice and have her tomb crowned, see Nigdelis, Voluntary Associations 26, inscription no. 13=IG X/22.1.260.

176 Cat. Thessaloniki 2003a, 8 (**cat. no. 72**). – Furthermore, for a workshop producing wine, with a press and several clay pithoi used as vats, in the ruins of an Early Christian, fifth-century basilica, ruined in the late sixth or early seventh centuries, in the immediate hinterland of Thessaloniki at Arethousa, see Adam-Velenē, Anaskaphē palaiochristianikēs vasilikēs 356. – Karivieri, Arethousa 2002, 191-192. – Sampanopoulou, Katalogos 46-47, with all prior bibliography.

177 For the excavation, see Pelekanidou, Euangelistria 534-535 (**cat. no. 73**). – For its later use in the production of wine, see Raptēs, Ergastēria 112.

Middle Byzantine Period

After the seventh-century Arab conquests of the south-eastern Mediterranean and especially after the capture of Crete (c. 826-961), Thessaloniki showed a marked demographic growth, as frightened inhabitants of the islands and the Aegean coast sought refuge in the city. At the same time, people from the northern and central Balkans migrated and settled in Thessaloniki and its surroundings, following the Slavic invasions of the sixth and seventh centuries – Thessaloniki itself was besieged five times between 597 and 676 – and especially after the founding of Bulgaria in 681. It has also been thought that the economic and geopolitical importance of Thessaloniki increased as a direct consequence of the creation of the Bulgarian state. The city became a military bulwark against Bulgaria, as well as the administrative centre of the Empire and a commercial hub for regional and inter-regional trade and as a centre for the promulgation of Christian and Imperial ideology to the Slavs.

Constantinople's restoration as the centre of Byzantine-Bulgarian trade in the last decade of the ninth century, seriously affected Thessaloniki's importance as an administrative and commercial centre. The situation further deteriorated with the outbreak of conflict between the two rivals in the region of Macedonia, culminating with the sack of Thessaloniki by the Saracens in the summer of 904 and the consequent enslavement of its inhabitants. The resulting period of population decline lasted until the reign of Vasileios II (963-1025). From the middle of the eleventh century, the Empire was in crisis, endangered by diverse enemies threatening its security. Thessaloniki itself was besieged by the Bulgarians in 1042. Nevertheless, its economy appeared to be flourishing, according to the description of the annual fair of Saint Dēmētrios by the anonymous author of the twelfth-century satirical dialogue *Timarion*. The demographic increase of Thessaloniki and its region continued until the mid-fourteenth century[178]. It has even been estimated that the size of the city in the eleventh or twelfth centuries reached 150,000[179]. The city was briefly captured by the Normans in 1185, while the anomalous political situation at the end of the twelfth century led to the fall of Constantinople and, a little later, of Thessaloniki to the Crusaders. Thessaloniki then became the capital of the Montferrat Crusader state, the Kingdom of Thessalonica, for the next twenty years, before being captured in 1224 by Theodore Komnenos Doukas, ruler of the Despotate of Epirus. Doukas then used it as his capital. Finally, in 1246, it became part of the Empire of Nicaea.

All this and the consequent fluctuations that resulted, necessarily affected the commercial life of Thessaloniki and can be considered in different ways in connection with the professional and artisanal activity in the city. This is especially apparent when the archaeological findings are examined in comparison with the historical texts that refer to the administrative and economic position of Thessaloniki in the Byzantine Empire, especially in the Balkan peninsula, during the Middle Byzantine period[180].

Urban Planning

Urban planning seems to have been neglected, if not actually non-existent, in Byzantium during the Middle and Late Byzantine periods. In the case of Thessaloniki, as in other ancient cities with a continuous existence, what defines them is the degree of preservation of the ancient structures that originally shaped them. What is generally to be noted is the abandonment of planning on a predefined geometrical layout. Organised building is only observed in the constructing and maintenance of fortifications[181].

Byzantine Thessaloniki, according to the picture presented by the archaeological excavations, preserved its Roman urban grid with twenty-four quarters (*insulae*) on an east-west axis and eight running north-south[182]. On the seaboard side and especially towards the port, the rectangular Hippodameian system was not applied. On the contrary, streets follow the coastline. In the northern, mountainous part of the city, where the Hippodameian system was never applied, no regularity in the setting of the streets is observed. The influx of large numbers of refugees and new-comers caused, at least temporarily, a shortage of available houses and lodging places and resulted in using places such as the public baths

178 Laiou/Morrisson, The Byzantine Economy 90, 93 with bibliography.
179 Treadgold, A History 702.
180 Kōnstantakopoulou, Vyzantinē Thessalonikē 81-94. – For a general overview on Macedonian History of this period, see the works of Christophilopoulou, Politikē istoria 250-257. – Eadem, Politikes exelixeis 258-2663. – Ahrweiler, Politikē Istoria 272-279. – Karagiannopoulos, Politikē Istoria 279-288. – Theocharidēs, Istoria Makedonias 41-95. – Stavridou-Zaphraka, Vyzantinē Thessalonikē 114-135. – Vakalopoulos, Istoria Thessalonikēs 102-185.
181 Bouras, Poleodomika passim and esp. 89.
182 Markē, Sōstikes anaskaphes 208, with references to a plethora of salvage excavations that support this view.

as emergency shelter[183]. There was, though, still space for gardens within the city walls, probably in the grounds of houses, or even in the areas close to the walls, which were probably not built upon[184]. The lower part of the city appears to have been densely populated, while the upper part, probably somewhere below modern Olympiados Street, where large cisterns for the redistribution of the water are found[185], had few buildings and was mostly occupied by monasteries.

In the Early Christian period, large urban villas had been built north of the complex of Hagios Dēmētrios, between Kassandros and Olympiados streets, within the framework of the Hippodameian grid. It appears that these now underwent major alterations. After being earlier subdivided into smaller properties, some of them were now abandoned, whilst some others were converted into monasteries and the entire area remained sparsely populated[186]. The perimeter of the lower city was occupied by poorer neighbourhoods and ruined complexes[187]. The excavations conducted in the city show that building activity in this period was mainly the remodelling and subdividing of Early Christian buildings with only the occasional construction of new ones. The spacious rooms of Early Christian houses were subdivided into separate apartments. In some instances even the original central atrium was converted into living quarters. These new houses, sometimes on two stories, together comprised a residential complex with a central court (αὐλαὶ)[188].

Public areas, such as squares, agoras and street porticoes, were gradually encroached upon by private individuals – even the streets were partly occupied – creating a warren of narrow streets[189]. Shops lined the streets or were found in private courtyards (αὐλαὶ), in contrast to the public nature of the space of the Ancient Agora. The main street (*Leōphoros*) was lined on both sides with workshops[190], just like the *mesē* in Constantinople. Furthermore, porticoes (also known as *emvoloi*), just like *fora*, were used by a variety of trades. They lined the streets of Constantinople and many other cities and often incorporated commercial premises behind the colonnades[191].

Infrastructure

Water and sewage pipes, water reservoirs and wells have been found in almost every salvage excavation, showing the constant use of this essential urban infrastructure[192]. In the eighth century, due to the damage caused by earlier earthquakes, mainly, if not exclusively, repairs of public buildings were undertaken. The vestibule of the Octagonal throne room in Galerius' palace and the *cryptoporticus* in the southern part of the Agora after the earthquakes of 620-630 were converted into large cisterns, apparently as part of the city's preparations to improve its ability to withstand protracted sieges[193]. The construction of new water reservoirs, in addition to the ones that already existed, give an indirect indication of the thriving population of the city at this time.

183 Bakirtzis, Imports, Exports and Autarchy 90. – Bakirtzēs, Agiou Dēmētriou Thaumata 2:3 §224: »προσπλευσάντων ἐνθάδε πλείστων ἐπηλύδων« [and many foreigners had put ashore here]; §226: »οἱ ἐνταῦθα προσπλέοντες« [those who put ashore here]; 1:14 §143: »πολλοὺς αὐτῶν προτροπαῖς τε καὶ ὑποσχέσεσι πείθειν τῇ πόλει προσχωρεῖν, ὡς μεμεστῶσθαι τὰ μὴ χρηματίζοντα δημόσια βαλανεῖα τῶν ἐκ τῆς βαρβαρικῆς πληθύος μεταχωρούντων, κἀντεῦθεν πλείστην τοῖς τῆς πόλεως χαρμονὴν καὶ θάρσος ἐγγίγνεσθαι« [through incitements and promises, they persuaded many of them to come over to the city, with the result that the public baths which had fallen into disuse were filled with a great number of barbarians who moved in, which fact filled the city's citizens with courage and joy]. – On the gradual decline of baths from the fourth century onwards, their falling out of use and their occasional use as private dwellings and workshops, see Sarandi, The Byzantine City 341-343.

184 Bakirtzis, Imports, Exports and Autarchy 92. – Bakirtzēs, Agiou Dēmētriou Thaumata 2:4 §252: »ἐν τοῖς ἔνδον τῆς πόλεως κήποις« [in the gardens inside the city].

185 Markē, Sōstikes anaskaphes 281, with older bibliography. – The Roman infrastructure of Thessaloniki's water supply system from Mountain Chortiatēs was improved and augmented in the Middle Byzantine period and operated without interruption until 1970. An underground pipe and waterbridge supplied water to the Acropolis at the north of the city. From there, through a many number of bifurcations, it was distributed to the baths and the water reservoirs of the city. One of the most important cisterns was quite probably the one in the precinct of the Vlatadōn monastery, Manōledakēs/Androudēs, To systēma ydromasteustēs 285-292 esp. 290. – Akrivopoulou, Ydatogephyra Chortiatē.

186 Bakirtzis, Imports, Exports and Autarchy 105. – Caminiatae, De expugnatione §5.2: »τὸ μὲν αὐτῆς πεδιάσιμον εἶναι καὶ ταῖς χρείαις τῶν ἐνοικούντων κατάλληλον, τὸ δὲ τοῖς βουνοῖς καὶ ταῖς τῶν ὀρῶν ἀκρότησιν ἀνατείνεσθαι« [One part of it is flat and suitable for the inhabitants' needs, while the other rises up towards the mountains and their peaks]. – A monastery operating in this period in Thessaloniki's upper town is Latomou, see Janin, Les églises et les monastères 392-394. – Also Karydas, Anaskaphes Agias Sophias kai Gyzē 342-344. Karydas, Vyzantinē monē stēn odo Thēseōs 152-154 pl. 6; Karydas, Anaskaphes Glaukou 249-255.

187 Bakirtzis, Imports, Exports and Autarchy 105. – For a detailed description, see Saint Theodōra, Life §50.1-14, where a young Theodōros was possessed by the Devil (μειρακιώδεσι παιδιαῖς [...] ἐν τινι τῶν τῆς πόλεως φορυτῶν ᾗττων καὶ τῇδε κἀκεῖσε φερόμενος ἰξεύων τε καὶ παγίδας στρουθίοις τῇ γῇ κρυφηδὸν ἐντιθείς, τοῦ πονηροῦ συνελήφθη πάγαις [...] μέγαν κτύπον ἐν ταῖς ἐκεῖ πλησιαζούσαις καμάραις ποιήσας) [running impetuously in outdoor children's games in one of the city's dumps, wandering here and there, chasing birds with a limestick and setting traps in the ground for sparrows, he was caught in the traps of Evil [the Devil] raising a great racket among the nearby arches]. – On a stylite, who lived in the western end of the city, see Saint Grégoire le Décapolite 60.8-11, and Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 104, with further bibliography.

188 Bakirtzis, Imports, Exports and Autarchy 106, with relevant examples of houses found in the Dioikētēriou Square. – Karydas, Palaiochristianikes oikies II 141. – Markē, Sōstikes anaskaphes 215.

189 On the finds proving that the *Leōphoros* was partly occupied, as was the marble-paved plaza east of the junction of the modern Venizelou Street, as well as on the major rising of the street and its transformation into a gravel-paved street at some point in the tenth century, see Makropoulou/Kōnstantinidou, METRO Thessalonikēs – Stathmos Venizelou.

190 Caminiatae, De expugnatione §9.6: »Λεωφόρου γὰρ δημοσίας τῆς πρὸς ἀνατολὴν ἀγούσης ἀπὸ τῆς δύσεως διὰ μέσου τῆσδε χωρούσης τῆς πόλεως καὶ ἀναγκαίως πειθούσης τοὺς παροδεύοντας πρὸς ἡμᾶς ἐνδιατρίβειν καὶ τὰ πρὸς τὴν χρείαν πορίζεσθαι, πᾶν ὁτιοῦν ἂν εἴποι τις τῶν καλῶν ἐξ αὐτῶν ἐκαρπούμεθά τε καὶ προσεκτώμεθα« [the main street ran from west to east through the city's centre, and encouraged travelers to stay in our city and lay in all necessary supplies. We benefited from them, and acquired all the goods one could name.]. Also, Makropoulou/Kōnstantinidou, METRO Thessalonikēs – Stathmos Venizelou.

191 Mundell Mango, The Commercial Map of Constantinople 192, with further bibliography. On the rights and obligations of the owners of the stores and workshops in relation to the colonnades see also Sarandi, The Byzantine City 195-196.

192 The information preserved by Kaminiates regarding a sewage system in the city is of importance, see Caminiatae, De expugnatione §57.7. – The finds of the metro excavations in the area of *Leōphoros* (junction of modern Venizelou Street and Agias Sophias Street) are enlightening regarding the preservation and use of Roman and Early Christian sewers until the Ottoman period: Dr Despoina Makropoulou and Mrs Krino Kōnstantinidou, personal communication. Also, see Makropoulou/Kōnstantinidou, METRO Thessalonikēs – Stathmos Venizelou.

193 On the *octagonon* (the octagonal throne room), see Spieser, Thessalonique 110-116. – Vitti, Poleodomikē exelixē 210-213. – On the *cryptoporticus* see Bakirtzēs, Agora tēs Thessalonikēs 5-19.

The ninth century saw the repair of several older monuments and the city walls[194]. Inscriptions on the walls also attest to their repair in the twelfth century in parts connected with the acropolis[195]. There is also direct reference in the written sources to old quarries that once operated within the city walls, at its northern, rocky part[196].

Fortifications and Port

It is probable that the acropolis was constructed as part of a tenth-century fortification programme. Probably in the same period, a second sea wall, seen only in excavations, was built south of the existing seaward fortifications. New curtain walls were built outside the old wall bordering the shoreline, so that the city was only accessible from the south to shipping[197]. The Constantinian port continued to be the main commercial port of the city at that time[198], but it was also the naval port and for that reason it was fortified by walls and towers. The sources also note the presence of state granaries (ὡρεῖα)[199] and customs around the port. Other ports in the city, apparently of lesser importance, were also mentioned in the sources: the *ekklēsiastikē skala* (ἐκκλησιαστικὴ σκάλα), probably at the south-east end of the city, connected to the Galerian palace[200], and the *kellarion* (κελλάριον), in one of the coves to the east of the city[201].

Churches

Large Early Christian churches (the Rotonda, the Hagios Dēmētrios, and the Acheiropoiētos) were renovated and repaired in this period[202], while the Hagia Sophia was constructed anew, becoming the largest new edifice in the Balkans during the seventh century[203]. The large octagonal church in the western part of the city was destroyed and in its place, probably at a later date, a monastery was founded[204]. Among the surviving churches of this period is the Church of the Mother of God, approximately in the middle of the *Via Regia*, which was built in 1028 under Prōtospatharios Christophoros, the Katepano of Longobardia, and his family. It is known today as the Panagia Chalkeōn[205].

Monasteries

Many monasteries existed inside the city during the Middle Byzantine period, probably due to the impetus of monasticism after the Iconoclasm. They were incorporated into the urban grid and unlike the Early Christian churches they do not represent significant landmarks. The founding of larger numbers of monasteries in Thessaloniki took place in a different period to that of Constantinople. Foundations flourished from the late eighth century to the middle of the tenth century, again in the twelfth century, and particularly in the Palaeologan period, especially during the early fourteenth century up until the conquest of the city by the Turks in 1430[206]. Among the convents we might mention those of Hagios Loukas, Hagios Stephanos (where Saint Theodōra lived as a nun[207]) and Vasilikon[208]; and of the monasteries, the Akapniou[209], Philokalou[210], and the Prodromou founded by Emperor Constantine VII in 946[211]. According to written sources, in Middle and Late Byzantine Thessaloniki, 83 per cent were male insitiutions and 17 per cent were female – a ratio similar to that seen in Constantinople and far higher than that of the provinces[212].

194 Kourkoutidou-Nikolaidou/Tourta, Peripatoi 20-21. – Ćurčić, Architecture in the Balkans 278.

195 Oikonomidès, La tour 33-36. – Ćurčić, Architecture in the Balkans 370.

196 In his account of Latomou Monastery in Thessaloniki, Ignatios, the abbot of Akapniou monastery, mentions old stone quarries inside the city: »περὶ τὰ βορειότερά που καὶ ἀνωφερέστερα μέρη τῆς πόλεως, ἃ δὴ Λατόμια ἐγχωρίως ὀνομάζονται, διὰ τὸ τοὺς λίθους ἐκεῖθεν (οἶμαι) λατομεῖσθαι τοὺς χρησίμους εἰς οἰκοδομάς«. [somewhere in the northern and higher parts of the city, which are called by the locals *Latomia* [quarries], because they quarried building stone from there]. – For the text and some recent comments on the passage, see Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 133-135.

197 Bakirtzēs, Thalassia ochyrōsē 316-318. – Velenēs, Ta teichē 133. – Bakirtzis, Urban Continuity 39-42.

198 Bakirtzēs, Thalassia ochyrōsē 315-320. – Odorico, Vyzantino limani 121-141. – For finds from the plots 18 Moskōph Street and 3 Danaidōn Street, see Markē/Chatzēioannidēs, Phrangōn 28, 273-274.

199 Bakirtzis, Imports, Exports and Autarchy 94-95. – Bakirtzēs, Agiou Dēmētriou Thaumata 2:4 §244: »ὄντος ἐν τοῖς ἐνθάδε δημοσίοις ὡρείοις σίτου.« – Cat. Thessaloniki 2002, 9.

200 Bakirtzis, Imports, Exports and Autarchy 95. – Bakirtzēs, Thalassia ochyrōsē 320-321. – Spieser, Note sur la chronologie 34, assumes that the *ekklēsiastikē skala* would have been inside Thessaloniki's main harbour.

201 Bakirtzēs, Agiou Dēmētriou Thaumata 2:1 §186: »εἰς τὸν πρὸς δύσιν ἐκκλησιαστικῆς σκάλας πύργον, ἔνθα καὶ παραπύλιον ὑπάρχει« [at the western tower of the *ekklēsiastikē skala* (literally »ecclesiastical ladder« or »staircase«), where there is a small side gate]; 2:1 §182: »εἰς τόπον κολπώδη ὁρμίσεώς τινος ὑπαρχούσης, τὸ ἐπικληθὲν ἐκ τῶν ἀρχαίων κελλάριον« [in a cove located there, that was called »*kellarion*« by the ancients]. – Bakirtzis, Imports, Exports and Autarchy 95. – Bakirtzēs, Thalassia ochyrōsē 321-322, placing it at Karampournaki. – Toska et al., Synkrotēma 426, place it in the bay to the east of the White Tower.

202 Velenēs, Mesovyzantinē naodomia *passim*. – Ćurčić, Architecture in the Balkans 277-280. – On the Rotonda: Moutsopoulos, Palaiochristianikē phasē Rotondas 355-375. – Theocharidou, Rotonta Thessalonikēs 57-75. – Velenēs, Mesovyzantinē naodomia 51-62. – Ćurčić, Architecture in the Balkans 279. – On the wall painting of the Ascension, see Xyngopoulos, Toichographia Analēpseōs 32-53. – On Hagios Dēmētrios: On the stairs of the south-eastern entrance to the church a small chapel, dedicated to Saint Euthymios, was built in the late ninth–tenth century, see Ćurčić, Architecture in the Balkans 279 and Velenēs, Mesovyzantinē naodomia 8-16, 20. – On the Acheiropoiētos Basilica: Raptēs, Paratērēseis 220. – Ćurčić, Architecture in the Balkans 279. – Velenēs, Mesovyzantinē naodomia 19-24, 37-51.

203 Theocharidou, Architektonikē naōn Agias Sophias 196-197. – Bakirtzēs, Neōteres paratērēseis 167-180. – Velenēs, Chronologēsē Agias Sophias 72-81. – For a dating in the middle of the eighth century Velenēs, Mesovyzantinē naodomia 62-94. – On the late-ninth century mosaics of the Ascension, see Pelekanidis, I mosaici 337-349 and Kourkoutidou-Nikolaidou/Mauropoulou-Tsioumē/Bakirtzēs, Psēphidōta Thessalonikēs 238-295 esp. 290-294.

204 Cat. Thessaloniki 2001, 7. – Markē, Enas oktagōnikos naos 117-133.

205 Euangelidēs, Panagia Chalkeōn. – Velenēs, Vyzantinē architektonikē Thessalonikēs 1-14. – Velenēs, Mesovyzantinē naodomia 16-19, 26-33, 94-97. – Ćurčić, Architecture in the Balkans 371-373.

206 Varinlioğlu, Urban Monasteries 197.

207 Saint Theodōra, Life §43.2-3: »συνῆλθε οὐ βραχὺς μοναζουσῶν ἀριθμὸς ἐκ τῶν γειτνιαζόντων μοναστηρίων« [many nuns from the neighbouring nunneries were gathered]; §60.7: »εἰς τὸ ἑαυτῆς ὑπέστρεψεν μοναστήριον« [she returned to her (own) nunnery]. – Cat. Thessaloniki 2001, 8. – Bakirtzēs, Monē Agias Theodōras 587-588.

208 Magdalino/Darrouzès, Some Additions and Corrections 277-279 on Βασιλικὸν nunnery.

209 Janin, Les églises et les monastères 347-349.

210 Theocharidēs, Sēmantikē monē 319-348.

211 Theocharidēs, Mēgalē monē 1-26, especially on its founding 6-7. – Euangelidēs, Eikonomachika mnēmeia 341-351. – Ćurčić, Architecture in the Balkans 279-280.

212 Varinlioğlu, Urban Monasteries 192.

As to the general distribution of monastic establishments in Thessaloniki, the following can be noted. The location of approximately a quarter of all monasteries (23.47 per cent) known through written sources remains unknown. More than 57 per cent of the remaining monasteries were located along the inland walls – especially towards the eastern walls – and 33 per cent in the higher regions of the city. They were quite accessible: 40 per cent of them were in close proximity to a major road, a logical arrangement if one takes into consideration their character as centres of social provision. Furthermore, 27 per cent were in the city centre, indicating the availability of land here, as well as the monasteries' integration into the city's civic centre[213]. More specifically, some of the information preserved in the sources notes that in the north-western part of the city someone converted his property into a monastery dedicated to Saint Mark[214]. Also, in the northern part of the city, close to the small Aproïtoi Gate (Παραπόρτιον τῶν Ἀπροΐτων), the Monastery of Saints Theodore and Mercurios – known also as the Monastery of Koukouliates – is mentioned, among others, in the eighth century. At some time this was relocated to the north in the area of the quarries, i.e. Latomeia (Λατομεῖα), near the chapel (εὐκτήριον) of Saint Zacharias, which is known even today as the Latomou Monastery[215].

Residences and Residential Areas

The large late-antique houses that were built in the upper part of the lower city and the lower part of the upper city, i.e. north of modern Kassandrou Street, were subdivided into smaller properties or converted into monasteries and as such they continued to cover an entire *insula* as a single complex[216]. Thessaloniki was organised in quarters, typically around a church which gave its name to the neighbourhood. The sources mention the neighbourhoods (γειτονίαι) of Hagios Mēnas, Kataphygē, Acheiropoiētos, Hagia Pelagia, Asōmatoi, Hagios Paramonos, Chrysē, Omphalos, and Hippodromos[217]. It is known that Jews lived near the port in the Vrochthoi (Βρόγχθων) quarter, near the market in the *Rogoz* (or *Rogos*) quarter, and probably west of the Panagia Chalkeōn in the *Omphalos* quarter[218]. Eustathios of Thessalonica also mentions in a letter to the Constantinopolitan Patriarch in the twelfth century that before his bishophric some of the Jews had moved into Christian plots, rebuilding ruined dwellings or even inhabiting Christian bulidings, some of which were decorated with Christian religious pictures[219].

Public Buildings

The only surviving secular public building of this time is the bath on Theotokopoulou Street, which has been dated to the eleventh century[220]. From indirect references in the sources it can be assumed that there was a palace, an episcopical residency and the private residences of high officials serving in the city[221]. There is evidence of teachers in the city from the fourth century when Eutychios the Teacher (Εὐτύχιος Διδάσκαλος) lived, known from his funerary inscription, which has survived up to the modern period[222]. The presence of schools, though, is not evident until the ninth century when Saint Gregory Decapolite referred to a student of such a school[223].

Cemeteries

The Byzantine period saw an important change in the cityscape with the development of smaller cemeteries within the city. After the seventh century we see these appearing throughout the city, but particularly around or within churches and in large open areas, such as the Ancient Agora. Here we mostly see the use of simple pit graves and only rarely examples of narrow barrel-vaulted tombs[224].

The otherwise obscure picture of the professional, artisanal and ultimately commercial side of Middle Byzantine Thessaloniki[225] is illuminated with great clarity by John Kamin-

213 Varinlioğlu, Urban Monasteries 190-191.

214 Saint Grégoire le Décapolite 60.8-11. – For the text and some recent comments on the passage, see Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 103.

215 As was mentioned in the *vita* of Hosios David, see Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 98-101, with comments on the text and relevant bibliography.

216 On the disintegration of the rich houses in Byzantium from the fourth to the late sixth centuries in general, see Sarandi, The Byzantine City 168-173, 454-454, for their use as chapels or monasteries see p. 172 with further bibliography. – Especially on Thessaloniki, see Karydas, Vyzantinē monē stēn odo Thēseōs 161 fig. 6. – Karydas, Anaskaphes Glaukou 249-250. – Bakirtzis, Urban Continuity 61, with further bibliography, proving that there was indeed no dense habitation during the Middle and Late Byzantine periods in the upper city and on the outskirts of the city.

217 On the increasing importance of the churches in the cities, their proliferation and their distribution pattern, see Sarandi, The Byzantine City 384-426. – On the fact that streets or quarters were named after the Early Christian church, see Sarandi, The Byzantine City 422-423, with bibliography. Especially for Thessaloniki see infra nt. 386.

218 Moutsopoulos, Evraïkes synoikies 1-41.

219 Eustathius, Opuscula 344 epistula λβ΄. – Starr, The Jews 237 text 184. – Moutsopoulos, Evraïkes synoikies 21: »Ἐπί τινων πρὸ ἐμοῦ τοῦ ἀχρειωτάτου ἁγίων ἀρχιερέων παρεχωρήθησαν Ἑβραῖοι πλατυνθῆναι. …Καὶ ὤκησαν οἱ μὲν ἐν ἐρειποτοπίοις χριστιανικοίς, ἀνοικισθεῖσιν ὑπ' αὐτῶν· οἱ δὲ καὶ ἐν οἰκήμασιν, ἐν οἷς ὤκουν Χριστιανοί· ὧν οἰκημάτων τινὰ καὶ θείοις εἰκονίσμασιν ἠγλαΐζοντο καὶ ἐψάλλοντο« [During the bishoprics of some of the holy prelates who came before my worthless self, Jews were granted rights to expand (their area of residence). Some rebuilt in Christian ruins, and others in buildings where Christians lived. And some of these buildings were embellished with holy icons and were celebrated].

220 Trypsianē-Omērou, Vyzantino loutro 587-599. – Trypsiani-Omirou, Byzantine Bath, Thessaloniki 314-317. – On an Early Christian bath connected to Acheiropoiētos, see **cat. no. 86**. – On the baths in general see Sarandi, The Byzantine City 325-342. – On the baths in Thessaloniki see Vitti, Poleodomikē exelixē 151, 194-197, 202-203, 241-243.

221 Rautman, Observations on the Byzantine Palaces of Thessaloniki 297-298, refers, among others, to Kaminiates, who was a cleric and *kouvouklesios* in the Imperial palace in 904; and to a reference of Eustathios to an Imperial precinct ἐς Κομνηνοῦ in 1185.

222 Tsigaridas/Loverdou-Tsigarida, Katalogos no. 8. – Feissel, Recueil des inscriptions 123.

223 Saint Grégoire le Décapolite §62.5-6: »νέῳ δε τινι ἐν τῇ τῶν παίδων σχολῇ διατρίβοντι μοναχός τις ὤφειλε χρυσίου νόμισμα ἕν« [a monk owed a gold coin to a young man who was studying in the boys' school].

224 For a concise presentation on relics and Christian burial sites and on the graves' import in the cities, see Sarandi, The Byzantine City 433-439, 459-460, with further bibliography. – Kanonidēs, Vyzantino koimētērio plateias Dioikētēriou 523-530. – Kanonidēs, Neōtera stoicheia apo tis anaskaphes tou 1998, 183-194. – Kanonidēs, Taphes entos tōn teichōn tēs Thessalonikēs 207-218.

225 Kōnstantakopoulou, Vyzantinē Thessalonikē 81-94, with all relevant bibliography; also raises the question whether that part of the text with the description of the city belongs to the original core of the text, or whether it is a Late Byzantine addition.

iates (or Caminiates), who described it as a dynamic and populous metropolis in his work *On the Capture of Thessalonica*, concerning the Saracen conquest in 904. He noted the central role of the city's busy main street, the *Via Regia*, or as it was then known, the Λεωφόρος (*Leōphoros*). The shops along the *leōphoros* were filled with different types of goods, namely woollen and silk textiles, gold and silver jewellery (some of them embellished with many precious stones), bronze, iron, tin and lead metalworks, and glassware[226]. Although no direct reference to whether these goods were local products or not is given, it is likely that many of them were locally produced and that only some were imported[227]. The premises on the *Leōphoros* operated as both workshops and sales outlets. They were only recently discovered – on today's Egnatia Street – and excavated to reveal how small and closely packed they were, as well as some of the items they produced, such as jewellery and their moulds[228].

There was an abundance of agricultural products and livestock from the surrounding plains, fish from nearby lakes and rivers, and a thriving port[229]. The economy of Thessaloniki has always been based on a combination of agriculture and trade, on the products of its hinterland and on the products of its artisans, and the imports traded by its merchants[230]. In the city centre, according to both written sources and archaeological finds, were many *ergasteria* (retail shops and/or workshops)[231]. These often extended their space onto the covered pavements or porticoes (ἔμβολοι)[232], or were occasionally concentrated in courtyards (αὐλαὶ). Each one of the courtyards formed a small economic unit, additionally often comprising houses and other buildings as well[233]. At least in one case, a courtyard was used exclusively for commercial and non-residential purposes[234]. Kilns have been recently found to the east of the waterfront, beside the sea wall, and near the port[235].

The *Leōphoros* was lined on both sides with workshops[236], just like the *Mesē* (Μέση) in Constantinople. It is well known that porticoes (or *emboloi*), just like *fora*, were used by a variety of trades and lined the streets of Constantinople and many other cities. In addition, commercial premises were often found behind these porticoes[237]. These workshops cannot be easily distinguished from other shops, since both manufacturing and retail activities took place in them. They were located among dwelling houses, giving the impression that no consideration was shown to the sort of disturbance they would cause to the local inhabitants[238].

Apart from those artisanal activities that, due to their nature, are untraceable archaeologically, remains of workshops of all kinds of trades and professions from this period have

226 Caminiatae, De expugnatione §9.6-9: »λεωφόρου γὰρ δημοσίας τῆς πρὸς ἀνατολὴν ἀγούσης ἀπὸ τῆς δύσεως διὰ μέσου τῆσδε χωρούσης τῆς πόλεως καὶ ἀναγκαίως πειθούσης τοὺς παροδεύοντας πρὸς ἡμᾶς ἐνδιατρίβειν καὶ τὰ πρὸς τὴν χρείαν πορίζεσθαι, πᾶν ὁτιοῦν ἄν εἴποι τις τῶν καλῶν ἐξ αὐτῶν ἐκαρπούμεθά τε καὶ προσεκτώμεθα. ἔνθεν καὶ παμμιγής τις ὄχλος ἀεῖ περιεστοίχει τὰς ἀγυιὰς τῶν τε αὐτοχθόνων καὶ τῶν ἄλλως ἐπιξενουμένων, ὡς εὐχερέστερον εἶναι ψάμμον παράλλιον ἐξαριθμεῖν ἢ τοὺς τὴν ἀγορὰν διοδεύοντας καὶ τῶν συναλλαγμάτων ποιουμένους τὴν μέθοδον. ἐντεῦθεν χρυσίου καὶ ἀργυρίου καὶ λίθων τιμίων παμπληθεῖς θησαυροὶ τοῖς πολλοῖς ἐγίνοντο, καὶ τὰ ἐκ Σηρῶν ὑφάσματα ὡς τὰ ἐξ ἐρίων τοῖς ἄλλοις ἐπινεόητο. περὶ γὰρ τῶν ἄλλων ὑλῶν, χαλκοῦ καὶ σιδήρου κασσιτέρου τε καὶ μολύβδου καὶ ὑέλου, οἷς αἱ διὰ πυρὸς τέχναι τὸν βίον συνέχουσι, καὶ μνησθῆναι μόνον παρέλκον ἡγοῦμαι, τοσούτων ὄντων ὡς ἄλλην τινὰ δύνασθαι πόλιν δι' αὐτῶν δομεῖσθαί τε καὶ ἀπαρτίζεσθαι« [the main street ran from west to east through the city's centre, and encouraged travellers to stay in our city and lay in all necessary supplies. We benefited from them, and acquired all the goods one could name. There was a mixed crowd of locals and foreigners that continuously frequented the streets. It was easier to count the grains of sand on the beach than (the numbers of) those crossing the marketplace and engaging in commerce. From this (commerce), there were created for most of them countless treasures of gold, silver, and precious stones, and they wore silk garments the way others wore woollen ones. I think it is superfluous to speak of other materials – copper, iron, tin, lead, and glass – through which the professions that employ fire sustain our lives. There were so many of these materials that one could have employed them to build and equip a new city].

227 On the artisanal production of Thessaloniki and the trade during the ninth and tenth centuries, especially, see comments by Nasledova, Remeslo i torgovija 61-84. – Also, see Kōnstantakopoulou, Vyzantinē Thessalonikē 56-58. – Bakirtzis, Imports, Exports and Autarchy 110-111.

228 Makropoulou et al., METRO kata to 2011; Makropoulou, To ergo (**cat. no. 59**).

229 Lefort, The Rural Economy 253-254, for discussion of information regarding the market-gardening suburbs of Thessaloniki, mainly to the west and south-east of the city and their products in Middle and Late Byzantine periods. – Also Laiou, The Agrarian Economy 358-359, for a mid-fifteenth-century case between Ivērōn monastery and the Argyropouloi family that involves a vegetable garden (κηποπεριβόλιον) just outside the city. – Caminiatae, De expugnatione §5.6-15. – For a Greek translation with comments, see Kameniatis, Stēn Alōsē 57f.

230 Laiou, Thessalonikē, ē endochōra kai o oikonomikos chōros 183. – On large tracts of land, entire villages and water mills that were the property of the church of Thessaloniki in the surrounding areas, see Theodōridēs, To ktēmatologio passim.

231 e. g. **cat. no. 98**. – The fact that the term *ergastērion* (ἐργαστήριον, workshop) was used irrespectively for all shops, offers an indirect hint that in the majority of the shops goods were not simply sold, but also, at least partly, manufactured. For the term ἐργαστήριον, see Koukoules, Vios kai politismos, B1, 235-236. – Kazhdan, Ergasterion 726. – Also, Dagron, The Urban Economy 396, 422-423.

232 Koukoules, Eustathiou laographika 385. – Koukoules, Odoi kai emvoloi 3-27.

233 On these courtyards and their topography in general, see Dagron, The Urban Economy 422 nt. 158, and Bouras, Aspects of the Byzantine City 515-520, both with further bibliography. – For two examples in fourteenth-century Thessaloniki where the term *aulē* (αὐλὴ) is used in legal documents to indicate the entire complex of buildings and the courtyard, see Živojinović, The Houses 472.

234 On the presence and the density of *ergastēria* in the area of *kataphygē* (καταφυγὴ) witness a document issued in 1117, preserved in the archives of Mount Athos, where can be seen that in one complex the monastery owned seven, two-storied *ergastēria*. See Oikonomidēs, Docheiariou 233. The complex presented a kind of a shopping centre or mall, consisting of non-residential workshops, according to Papagiannē, Morphes oikodomōn 24-25, 35-40.

235 At least two, double-roomed workshops with kilns and wells, dated to sometime between the mid-seventh and twelfth centuries, have been found (**cat. nos 3, 67**). One of them was secondarily used as a lime kiln. Tsimpidou-Avlōnitē/Lykidou/Euthymoglou Nea stoicheia. – On the sea walls and their relocation towards the sea, see Bakirtzēs, Thalassia ochyrōsē passim esp. 329. – Velenēs, Ta teichē 132-133. – Further to the east, closer to the port and adjoining the sea walls, at 18 Moskōph Street (**cat. no. 22**), Middle Byzantine circular kilns (identified as pottery kilns) have also been located, see Cat. Thessaloniki 2002, 14-15. – Furthermore, at 59 Leōphoros Nikēs a modern period pottery kiln has been excavated (**cat. no. 38**).

236 Caminiatae, De expugnatione §9.6: »Λεωφόρου γὰρ δημοσίας τῆς πρὸς ἀνατολὴν ἀγούσης ἀπὸ τῆς δύσεως διὰ μέσου τῆσδε χωρούσης τῆς πόλεως καὶ ἀναγκαίως πειθούσης τοὺς παροδεύοντας πρὸς ἡμᾶς ἐνδιατρίβειν καὶ τὰ πρὸς τὴν χρείαν πορίζεσθαι, πᾶν ὁτιοῦν ἄν εἴποι τις τῶν καλῶν ἐξ αὐτῶν ἐκαρπούμεθά τε καὶ προσεκτώμεθα.« [the main street ran from west to east through the city's centre, and encouraged travellers to stay in our city and lay in all necessary supplies. We benefited from them, and acquired all the goods one could name]. – Also, Makropoulou/Kōnstantinidou, METRO Thessalonikēs – Stathmos Venizelou.

237 Mundell Mango, The Commercial Map of Constantinople 192, with further bibliography. – On the rights of the owners of the stores and workshops in relation to the colonnades, see also Sarandi, The Byzantine City 195-196.

238 Mundell Mango, The Commercial Map of Constantinople 192, with further bibliography.

been located in excavations both outside and within the city walls. We find them in residential quarters, close to large churches, near the sea walls in the centre and around the port. Potteries and brickyards have been found to the east, outside the walls, but also in the city, in the thinly populated north-western part, as well as on the *Leōphoros* in the eleventh century, and the west end of the city in the area of the port. Glassworkers operated in central areas close to the Hagia Sophia, as well as in the densely populated western part of the centre. Metal workshops have been found in several sites along the *Leōphoros*, along other main streets, close to the port and near the west walls. A coppersmiths' market, the *Chalkeutikē Stoa* (Χαλκευτικὴ Στοὰ), is known to have existed on the *Leōphoros*, west of the Ancient Agora. Finally, noisome and aggravating for the local inhabitants, dyeworks have been found north of the Hagia Sophia and south of the *Leōphoros*, as well as further north, to the west of the Hagios Dēmētrios – both densely populated residential areas.

Kaminiates mentioned a market, which he described as the heart of the economic life of the city. According to Bakirtzis, this can probably be connected with the *Megalophoros* and the area of the Ancient Agora[239]. Also, the coppersmiths' market, *Chalkeutikē Stoa*, where copper vessels and utensils were made, it is known, from the *Passio Altera* of Saint Dēmētrios' life, to exist at the south-west of the main Agora of the city (the *Megalophoros)*[240]. Also, another market, or possibly a fair, is mentioned, the *Phoros of Stavrion* (Φόρος Σταυρίου), in the area of Hagios Mēnas, close to the port[241]. Furthermore, another market, or probably a fair, is mentioned by Theodōros Studitēs in a letter of 797. He was then in exile in Thessaloniki, living at the west end of the central street, inside the Cassandria Gate. There, probably on the site of the Hippodrome, according to Bakirtzis, the Thessalonians and the inhabitants of Kalamaria traded agricultural products, raw materials, artisanal products and commercial supplies[242]. It is well attested that in Macedonia in general and the region of Thessaloniki multiple activities and polyculture prevailed in agriculture throughout the Byzantine era, offering a wide array of products for the city's markets[243].

From the ninth century onwards, and probably from quite earlier, markets were held periodically outside the city limits, gradually evolving into the annual fair, the so-called *Dēmētria.* This large livestock and goods fair took place outside the western walls from 20 October to 28 October in connection with the annual veneration of Saint Dēmētrios. At this fair regional, inter-regional and international trade was catered for[244]. Here merchants from far and wide gathered, selling their products from tents arranged in rows forming a long road with many short, vertical bifurcations. Such an arrangement reminded the author of the *Timarion* of the numerous short legs of an animal[245]. The author goes on to praise the fertility of the Axios valley and the commercial activity of the city, as shown in this annual festival of Saint Dēmētrios[246]. Greek merchants from all parts of the Byzantine Empire, as well as Bulgarians, Russ, Hungarians, Italians, Celts and Gauls are specifically noted among those taking part in the fair. Some goods, such as those from the Black Sea region, came via Constantinople. Greeks bringing fabrics from Boeotia and Peloponnese are mentioned, as were western merchants, Italians, Spaniards, Portuguese and French bringing fabrics by ship. Egyptian and Syrian merchandise, probably fabrics, is also mentioned as being sold at the fair[247].

It appears that Thessalonian monks were also dealing in lucrative commercial activities, possibly to a greater extent than their religious duties, according to imputations of Archbishop Eustathios of Thessalonica[248]. For example, it is

239 Bakirtzis, Imports, Exports and Autarchy 109-110. – Caminiatae, De expugnatione §9.7: »τοὺς τὴν ἀγορὰν διοδεύοντας καὶ τῶν συναλλαγμάτων ποιουμένους τὴν μέθοδον« [those passing through the marketplace and engaged in commerce]; §38.4: »διήει τῆς ἀγορᾶς ἐν μέσῳ« [was running in the middle of the marketplace]. – The area of the Roman Agora of Thessaloniki was an open square in the Late Byzantine period, see Bakirtzis, Urban Continuity 57.

240 Tafrali, Topographie de Thessalonique 126 nt. 2.– Bakirtzēs, Agiou Dēmētriou Thaumata 37, 350 esp. for this reference at p. 36: »ἐκ δυσμῶν του τῆς πόλεως μεγαλοφόρου ἐν τῇ ἐκεῖσε Χαλκευτικῇ λεγομένῃ Στοᾷ« [in the western part of the city's *Megalophoros*, in the so-called *Chalkeutikē Stoa*].

241 For the only reference to that market, see the Testament of Theodōros Karabas, issued in May 1314, published in *Actes de Chilandar* 60, 62 no. 27. – More recently published in Actes de Chilandar I, 216 no. 30 esp. ln. 28.

242 Bakirtzis, Imports, Exports and Autarchy 111. – Vitti, Poleodomikē exelixē 216-218. – On this type of markets see also Laiou/Morrisson, The Byzantine Economy 37. – Hattersley-Smith, Byzantine Public Architecture 188-189. – Theodorus Studita, Epistulae §15.106-118 (epistula 3): »προσέμενεν ἐν τῇ ἀνατολικῇ πόρτῃ [...] καὶ μετὰ τὸ εἰσελθεῖν κλείσαντες τὰς πύλας ἦγον διὰ τῆς ἀγορᾶς« [waited at the eastern gate and after entering they closed the gates and passed through the marketplace]. – See Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ἡ Thessalonikē stē Vyzantinē logotechnia 6-7. – On the fact that in Constantinople there existed an outer band of animal or food markets as opposed to an inner band of luxury markets in the Forum of Constantine and in *stoai*, see Mundell Mango, The Commercial Map of Constantinople 204-205.

243 Laiou/Morrisson, The Byzantine Economy 113-115, 171-172.

244 Laiou/Morrisson, The Byzantine Economy 81-82 for a consice presentation of the classification of the markets, the trade and the exchange systems in Byzantium.

245 Vlachakos, Timariōn 54-55, §128-132, 135-136 »ἐμπορικαὶ σκηναὶ ἀντιπρόσωποι, στοιχηδὸν ἐκ παραλήλου πυγνύμεναι· ἐπὶ μακρὸν οἱ στοῖχοι διήκοντες ἀντιπλεύρῳ τινί διαστάσει διέξοδον ἐν μέσῳ πλατεῖαν εὑρύνοντες καὶ τῇ ῥύμῃ τοῦ πλήθους τὴν πάροδον ὑπανοίγοντες. [...] ἐγκάρσιά που τῶν στοίχων ἕτεραι σκηναὶ παρεπήγνυντο καὶ αὗται μὲν στοιχηδόν, ἐπὶ μακρὸν δ' οὐκ ἔτι, ἀλλ' ὡσπερεὶ σμικρότατοι πόδες ἑρπυστικοῖς ὁλκοῖς παρεφύοντο« [Vendors' tents were set up facing one another and in rows extending at great length, with the distance between them leaving in the centre a wide opening for people to pass through. (...) Perpendicular to these, they had set up other tents, these of course also in rows, but in small ones, like tiny legs extending sideways from a long, snake-like body]. Laiou, Thessalonikē, ē endochōra kai o oikonomikos chōros 183-194.

246 Tsaras, Timariōn 189-203. Vlachakos, Timariōn 47-61, 175-190. On the fair's inter-regional character and its place in the economy of the region, see also Laiou, Thessalonikē, ē endochōra kai o oikonomikos chōros 183-194; Laiou, Exchange and Trade 756.

247 Laiou, Thessalonikē, ē endochōra kai o oikonomikos chōros 184. Kōnstantakopoulou, Vyzantinē Thessalonikē 213.

248 Eustathius, Opuscula 223, 38-40, in his work Ἐπίσκεψις βίου μοναχικοῦ ἐπὶ διορθώσει τῶν περὶ αὐτόν among the others he mentions that one can see them more often in the marketplace than in the church's congregation. »Συχνότερον γὰρ βλέπει τούτους ἡ ἀγορὰ, ἤπερ τὸ ἐκκλησιαστικὸν ἄθροισμα· οἳ καὶ θᾶττον ἂν ἀπολέξωνται μονάζειν, ἤπερ ἀγοράζειν« [one sees them more often in the marketplace than at church services]. He culminates his castigation in p. 229 ln. 18: »οἳ τοῦ κουρεύσασθαι τὸ ἐμπορεύεσθαι ἀπώναντο, καὶ ἀδεῶς αὐτὸ πλημμελεῖν« [who by becoming monks have purchased the right to engage in commerce, and that without fear of sinning], refering to the fact that they prefer the activities of a merchant to those of a monk; and in ln. 48 mentioned that they strive to accumulate money and that they gradually get so fat that he wonders how they present themselves as monks and

known that the Saint Dēmētrios Basilica maintained a candle making workshop, where candles of standardised sizes – small, medium and large – were produced. Larger, man-sized candles came from an independent workshop. These were sold to pilgrims by *paramonarioi*, who kept a percentage of the price[249].

Other workshops for making candles must have existed in the city throughout the Byzantine era, supplying Thessalonians with candles for their religious observances[250]. The virtues of wax candles and their superiority when compared to other burning materials were extolled by Eustathios of Thessalonica, who may have been expressing the general opinion of Byzantine society, certainly that of twelfth-century Thessalonians[251].

Ceramic Production

During the Middle Byzantine period, workshops specialising in the production of bricks and roof tiles were active outside the city walls to the east, in a small cove[252]. They were known in early and mid-tenth-century sources as *kaminia*, i.e. kilns[253]. The type of bricks produced by this kind of kiln can be seen in the surviving monuments of the city[254] (**fig. 24**).

An eighth-century pottery has been found in the north-western part of the city where clay vessels, possibly even transportation vessels, were produced[255]. An eleventh or early-twelfth-century pottery was located in the city centre, practising a regionally rare technique of layering vessels in the kiln by arranging them on shelves of clay rods[256]. Another pottery kiln used in the manufacture of vessels, generally dated to the Byzantine era, has been unearthed in the south-western part of the city[257]. Middle Byzantine circular kilns, which have been identified as pottery kilns, have been found near the port, adjoining the sea wall at 18 Moskōph Street[258]. Tableware present in the city during this period includes greenish bowls and plate, with painted or incised-graffito ware[259], and ninth or tenth-century glazed white-clay bowls with polychrome or stamped decoration[260]. However, there is no indication which of these, if any, were produced locally. There is no evidence for the local production of any of the locally found tableware vessels, with the possible exception of some lower quality twelfth or thirteenth century examples[261]. An apparently imported frieze of glazed tiles bearing kufesque decoration on the southern side of the Panagia Chalkeōn should also be added to the list of the clay products present in the city in the eleventh century[262].

A group of late-seventh-century pointed amphora-shaped vessels is also considered to be produced locally (**fig. 25**). They have been used in their hundreds to fill the northern and southern upper gallery floors of the Hagia Sophia[263]. Most of them are medium-sized with thin walls, badly fired and obviously unsuitable for transportation use. Due to their light weight and fragility, it has been proposed that they belong to the same category of vessels mentioned in historical sources

not as fat oxen or calves: »Ὅτε δε τις λεπτός, καί, ὡς ἂν εἴποι τις, ὑπέρινος τῇ ἰσχνότητι, τὸν μονήρη βίον ὑπεισελθὼν λιπαίνεται, παχύνεται, πλατύνεται […] ἀλλ' εἰς χρήματα δι' ἐπικτήσεως, πῶς ἂν συστήσει, μοναχὸν ἑαυτὸν εἶναι, καὶ οὐ παχὺν βοῦν, ἢ μοσχίον« [and so, when one who is thin, worn out by his thinness as one might say, enters monastic life, he becomes »well-oiled«, becomes fat, and grows broad, as an unchecked beast and not only physically from living the good life, but in additional money that he acquired after (his tonsureship as a monk). How could such a one introduce himself as a monk, and not as a fat ox or calf?]. On monastic life in the twelfth century seen through the work of Eustathios, see Konidiarēs, Monastikē zōē 135-141. Kōnstantakopoulou, Vyzantinē Thessalonikē 160. Magdalino, Eustathios and Thessalonica 227-230. On the hierarchical order, the ecclesiastical area and the administrative organisation of the archbishopric of Thessaloniki from mid-eighth century to 1430, see Chatzēantōniou, Mētropolē Thessalononikēs. On the amount of land owned by the Thessalonian church, and the income from it, during the Middle and Late Byzantine period, see Theodōridēs, To ktēmatologio passim.

249 Bakirtzis, Imports, Exports and Autarchy 100-101. Bakirtzēs, Agiou Dēmētriou Thaumata 131-135, 376, 1:7 §64, 66, »Περὶ Ὀνησιφόρου τοῦ παραμοναρίου«. Bakirtzēs, Agiou Dēmētriou Thaumata 1:7 §64: »μικροὺς ἢ μεγάλους αὐτόθι προσφέρει κηρούς […] νομίσας χρηματικώτερον περιποιεῖν τι καὶ τῷ ἁγίῳ καὶ ἐμαυτῷ […] τοὺς μὲν μεγάλους τῶν προσφερομένων κηρῶν παραχρῆμα ἐσβέννυον, λεπτοὺς δὲ ἀντ' αὐτῶν καὶ μικροὺς ἐπήγνυον καίεσθαι« [here offer small or large candles (…) believing that I was offering some pecuniary gift both to the Saint and to myself (…) I was blowing out the larger candles immediately, and instead lighting small, slim candles]; and §66: »ἦκέ τις μεγίστους λίαν προσάγων κηρούς« [someone came bringing some very large candles].

250 For references concerning Thessaloniki, see Saint Theodōra Life §6.3-4: »τὰς ἐκ κηροῦ λαμπάδας χερσὶ κατέχων ἕκαστος« [each held wax candles in his hands]. – Bakirtzis, Imports, Exports and Autarchy, 111. Generally on candle making and candle makers (κηρουλλάριοι) and relevant references in Byzantine texts, see Koukoules, Vios kai politismos, B1, 197, and Taft/Kazhdan, Candles 371-372. Also, see Motsianos, Phōs Ilaron 69-120, where both texts and archaeological finds are examined thoroughly, and candles and candle making from Roman to Late Byzantine period are presented. On Middle and Late Byzantine period especially, see Motsianos, Phōs Ilaron 92-98.

251 Eustathius, Opuscula, Ἐπίσκεψις βίου μοναχικοῦ ἐπὶ διορθώσει τῶν περὶ αὐτόν, 235:87-88.

252 Cat. Thessaloniki 2003a, 11 (**cat. no. 7**). – Bakirtzis, Imports, Exports and Autarchy 108-109. The proximity of the workshop to the sea, leads to the logical assumption that part of its production was transported by sea to other cities.

253 Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 117, if the kilns mentioned during the visit of Saint Elias the Younger in the 903 were indeed for pottery and if they were not at the western part of the city. For the sale of a roof-tile workshop situated near the sea for three gold coins in 952, see Actes de Lavra I 97-102 no. 4. The workshop belonged to the monastery of Saint Andreas in Peristera, see Sampanopoulou, Katalogos 91, 141.

254 Panagia Chalkeōn and the chapel of Hagios Euthymios are the best preserved examples, see Euangelidēs, Panagia Chalkeōn. Mauropoulou-Tsioumē, Byzantinē Thessalonikē 104-110. For a thorough overview of the Middle Byzantine church architecture in Thessaloniki see Velenēs, Vyzantinē architektonikē Thessalonikēs 1-16; and also Velenēs, Mesovyzantine naodomia passim.

255 Kousoula/Kōnstantinidou/Tourtas, Agiou Dēmētriou kai Philōta. – Makropoulou, To ergo (**cat. no. 21**).

256 Makropoulou et al., METRO kata to 2011. – Makropoulou, To ergo (**cat. no. 24**). Konstantinidou/Raptis, Archaeological Evidence of an Eleventh-century Kiln.

257 Kourkoutidou-Nikolaidou/Tsioumē, Phrourio Vardariou 239-240 (**cat. no. 23**). – Markē, Symplērōmatika archaiologika stoicheia 139, 148 illus. 1 fig. 7. Part of another kiln has also been located at the same site (**cat. no. 25**).

258 **Cat. no. 22**, see Cat. Thessaloniki 2002, 14-15.

259 Cat. Athens 1999, 38, 46-47 nos 21, 32-33 (D. Papanikola-Bakirtzi).

260 Bakirtzis/Papanikola-Bakirtzi, De la céramique byzantine 421-436. Kanonidēs, Mesovyzantinē ephyalōmenē keramikē 71-76. For an overview of Middle Byzantine glazed pottery and issues of their trade and market see Papanikola-Bakirtzi, Ceramics on the Market 194-205.

261 Bakirtzis/Papanikola-Bakirtzi, De la céramique byzantine 425-426.

262 Tsitouridou, Panagia Chalkeōn 22-24. See also Mundell Mango, Polychrome Tiles 37-38 fig. 33, where their use is placed in the context of the contemporary polychrome clay tiles used in architectural decoration.

263 Kissas, Angeia metaphoras 232-245.



Fig. 24 Panagia Chalkeōn, general view, 1028.

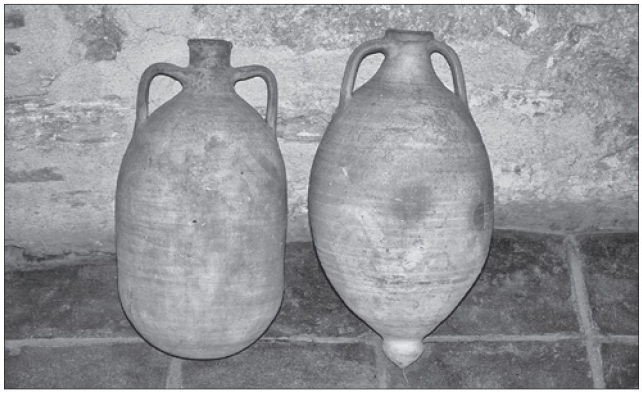


Fig. 25 Amphoroid vessels, Thessaloniki, Hagia Sophia's vaults, late seventh century.

as having been used to extinguish the fire at the Basilica of Saint Dēmētrios[264]. It is also accepted that both amphorae, used, among other things, for extinguishing fires, and clay grenades were in use and probably produced in tenth-century Thessaloniki[265]. Forms of smaller and bigger amphorae and pithoid vessels made for transporting and storing goods are also found in large numbers in the Hagia Sophia, shedding light on the typology of pottery present or even made in late-eleventh-century Thessaloniki[266].

264 Bakirtzis, Imports, Exports and Autarchy 101. Bakirtzēs, Agiou Dēmētriou Thaumata 2:5 §104: »τὸ πῦρ ἀνανεμηθὲν φθάσαι τὴν ὀροφὴν καὶ τοὺς καλουμένους καλάθους ἅρξασαι περιτεφροῦν, δὴ τότε τινές, ἀεροδρομήσαντες εὐσκύλτως κατὰ τῶν δοκῶν σὺν ἀγγείοις πλείοσιν ὑδατοφόρους, θεοῦ συνεργείᾳ περιεγένοντο τοῦ φλογμοῦ.« [the fire rose up to the roof, and began licking at the coffers. Finally, a number of men, tiptoeing nimbly atop the beams and holding a great number of containers filled with water, defeated the fire with God's help]. – Bakirtzis, Céramiques en comblement de voutes 697-702 esp. figs 6-8.

265 Bakirtzis, Imports, Exports and Autarchy 108. – Kaminates §31.8: »ὕδατά τε ταῖς ἐπάλξεσιν ἔν τισι προαποθέμενοι σκεύεσιν« [for us to bring water to the ramparts in containers] §32.10: »ἄλλους πυρί τινι, καὐτῷ τετεχνημένῳ καί τισιν ὀστρακίνοις σκεύεσι προηυτρεπισμένῳ« [to others, some type of artificial fire is stuffed in earthenware containers] §33.7: »σκεύεσιν ὀστρακίνοις ἐπιτηδευμένα.« [in earthenware containers prepared in advance] §34.7: »πῦρ τε διὰ τῶν σιφώνων τῷ ἀέρι φυσήσαντες, καί τινα ἄλλα σκεύη καὶ αὐτὰ πυρὸς ἀνάμεστα εἴσω τοῦ τείχους ἐξακοντίσαντες« [they also threw fire into the air with *sifonia* (flame-throwers) and hurled other implements containing fire inside the walls].

266 Kissas, Angeia metaphoras illus. 2-14 figs 2-8. Bakirtzis, Céramiques en comblement de voutes 697-702 esp. figs 2-4.

Glassworking

Glassworking is one of the few artisanal activities described by Kaminiates that has been proven archaeologically to be present in the city, although no firmly dated glass vessels have been discovered archaeologically[267]. In the centre of Thessaloniki, in disregard of legal regulations[268], two glass workshops have been discovered (**fig. 26**). The first, to the west of Hagios Dēmētrios, produced glass vessels and its furnace is the only one in the city to have survived. Among its products, stemmed beakers and hanging lamps are the most identifiable[269] (**fig. 27**). The second glass workshop was located near the Hagia Sophia, to the north-east, and only movable finds have been unearthed. Apart from deformed glass masses, of interest are the few glass tesserae, a dark blue glass cake for the production of mosaic tesserae and dark blue tiles, square and circular ones, seemingly decorated with near white and red festoons[270].



Fig. 26 Glass furnace and wasters from Thessaloniki, Dioikētēriou Square, early ninth century.



Fig. 27 Glassworking remains, from Thessaloniki, 3 Agapēs Street, Middle Byzantine period.

Metalworking

Several Middle Byzantine metalsmiths' workshops have been located at the outskirts of the city within the city walls, and in the city centre[271]. It has already been noted that a *fabrica*, a state arms factory, was active in Thessaloniki from the Early Christian period[272]. Middle Byzantine sources, like Eustathios of Thessalonica, note that a *zavareion,* i. e. a state armoury and probably an arms factory, operated in the city during the eleventh century[273]. It is also known that the *stratēgos* of the city was ordered to manufacture 6,000 arrows, 3,000 lances and as many shields as possible for an expedition to Crete during the reign of Leo VI (886-912)[274]. A group of 182 iron arrowheads was discovered in one of the towers of the Acropolis, which was used over a long period of time to defend the city, during its restoration in 1995, although they should be probably dated to the Late Byzantine period (**fig. 28**). Apart from smaller triangular arrowheads for bows, there are also a few examples of massive, triangular bolt

267 On Middle Byzantine glass finds from northern Greece in general, see Antonaras, Old and Recent Finds of Byzantine Glass passim, where both plain vessels, as well as rare and apparently precious silver-stained vials from the region of Thessaloniki are described.

268 Laws that were in use throughout the Byzantine period and are preserved in the fourteenth-century work of Konstantinos Armenopoulos, namely, Armenopoulos, Procheiron Nomōn 117-118, 2.4.19: »Ἐπαρχικὸ. Περὶ ὑελουργῶν καὶ σιδηρουργῶν. Ὑελουργοὺς καὶ σιδηρουργοὺς τοὺς ἐργαζομένους τὰς ἀξίνας καὶ τὰς ἄμμας καὶ τὰ τοιαῦτα μεγάλα ὄργανα, καὶ ἀνδριαντοπλάστας, οὐ χρὴ ἐν αὐταῖς ταῖς πόλεσι τὰ τοιαῦτα ἐργάζεσθαι. εἰ δὲ ἀνάγκη τις γένηται τούτοις κατοικεῖν τὰς πόλεις, καὶ τὰς τούτων ἐργασίας ἐν αὐταῖς γίνεσθαι, εἰς τοὺς ἀπῳκισμένους καὶ ἰδιάζοντας τῶν πόλεων τόπους δεῖν ταύτας ἐργάζεσθαι. πολὺς γὰρ ὁ ὑπὸ τοῦ πυρὸς πέλων κίνδυνος τοῖς οἰκήμασι καὶ τοῖς σώμασι συνεχὴς λοιμὸς γίνεται« [On glassworkers and blacksmiths. Glassworkers and blacksmiths who produce hoes and sickles and other large tools, and statue makers should not be working within cities. If there is a need for them to live in the cities and their works to be done in them (the cities), they should work in uninhabited and specific areas, given that there is a great danger of houses catching fire, and of humans catching diseases].

269 Kanonidēs, Anaskaphē ergastēriou yalourgias 143-153 (**cat. no. 66**). – Spatharas et al., New Magnetic 134.

270 Cat. Athens 2002, 119-120 no. 115a (I. Kanonidēs), dated generally to the Middle Byzantine period. – For the excavation, see Kanonidēs, Agapēs 3, 490-493 (**cat. nos 65, 107**).

271 Find from the 5 Gyzē Street plot: Cat. Thessaloniki 2002, 11 (**cat. no. 52**). – 3 Tzacheila Street: Markē, Tzacheila 3, 584-586 figs 11-12 (**cat. no. 55**). – 74 Venizelou Street: Kissas, Venizelou 74, 238-242 (**cat. no. 56**). – 74 Olympiados Street: Markē, Olympiados 74, 430-432 (**cat. no. 54**). – 67 Egnatia and G. Bakatselou Street: Markē, Provlēma anagnōsēs 457-458 fig. 9 illus. 5 (**cat. no. 57**). – 28 Phrangōn Street: Markē/Chatzēiōannidēs, Phrangōn 28, 277 (**cat. no. 58**). – Egnatia and Venizelou, Metro digs: Makropoulou et al., METRO kata to 2011. – Makropoulou, To ergo. – Makropoulou/Kōnstantinidou, METRO Thessalonikēs – Stathmos Venizelou (**cat. no. 59**), where, among others, several moulds for earrings, rings, amulets and crosses, along with finished products have been found.

272 Notitia Dignitatum, Or. XI, 35-9: »*Fabricae*: *…Illyrici quatuor: Thessalonicensis, Naissatensis, Ratiarensis, scutaria Horreomargensis*« [in [the diocese of] Illyricum four: at Thessaloniki, at Naissus, at Ratiaria, of shields at Horreomargi]. – Generally on *fabricae* see James, The *fabricae* 257-330. – Also, Tafel, De Thessalonica 184 nt. 30. – Spieser, Thessalonique 15 nt. 51.

273 Eustathius, La espugnazione, 86:20. David Doukas Komnēnos, the governor of the city, gave a running commentary on a battle from this vantage point: »Ὑψιστος γὰρ ἐν τῷ ἐῴῳ γηλόφῳ τοῦ καθ'ἡμᾶς Ζαβαρείου ἐπανηγύριζε, θεωρικῶς τὴν τῆς μάχης ἐκείνης γνωματεύων διάθεσιν, ἣν ἐγειρομένη κόνις ὑπὸ τῶν τρεχόντων καὶ ἀντιτρεχόντων ἐσήμαινε.« [High on the eastern hillock of our *Zavareion* (armoury), he began delivering a speech, making theoretical observations on the developing battle on the basis of what he could gather from the dust raised by soldiers running about on both sides].

274 Porphyrogenitus, De cerimoniis 657 II.44.12-14: »ἱστέον, ὅτι ἐδέξατο ὁ στρατηγὸς Θεσσαλονίκης τοῦ καμεῖν σαγίτας χιλιάδας σ' καὶ μεναύλια χιλιάδας γ' καὶ σκουτάρια, ὅσα δυνηθῇ«. Kolias, Zaba –Zabareion – Zabareiotes 27-35 esp. 31.



Fig. 28 Iron arrowheads and bolt heads from tower (Π2) of the Acropolis, Middle and Late Byzantine period.

heads with long cylindrical shafts for crossbows or heavier arbalests (τζάγκραι or βαλλιστρίδαι)[275]. We should also include the mint among the metalworking activities in the city. The mint operated almost continuously throughout the Byzantine period. There is concrete evidence for minting in Thessaloniki until 630 and then again from the 820s[276].

Several lead seals found in Thessaloniki, which belonged to religious and state dignitaries of the city or region, shed light on another activity of local metalsmiths, i.e. the production of lead blanks and *boulōtēria* (βουλωτήρια), the metal stamps used for making the inscriptions and representations on the lead seals[277] (**fig. 29**).

From the sixth or seventh centuries the bishopric of Thessaloniki, among its other possessions, owned large estates, including water mills, to the east of the city at the site of the Ropalaia (Ροπαλαία), near the Byzantine village of Hagia Euphēmia (Ἁγία Εὐφημία), modern Lakkia[278]. Here excavations have revealed a workshop for some metal refining process, possibly of gold, which may have operated from as early as the fifth or sixth century up until the fifteenth century[279]. An eighth-century stone mould for *eulogiae* (εὐλογίαι), found on the north side of the Hagios Dēmētrios complex[280] was assumed previously to have been used for stamping metal *eulogiae*, but it appears more probable that it was used for

275 For a thorough bibliography of Byzantine military history and technology, see Devries, A Cumulative Bibliography 38-52, and 750-769 for bows and crossbows especially. See also McGeer, Archery 156, and McGeer/Kazhdan/Cutler, Weaponry 2192, where it is noted that, according to Anna Komnene, the Crusaders' western type of crossbow was unknown to Byzantines prior to the twelfth century. See also Lepage, Medieval Armies and Weapons in Western Europe 14-17, on the Byzantine Empire in general, 113-116 on crossbows, which were known from Roman times, but were used in western European armies from the twelfth century onwards. I thank my collegue Dr D. Athanasoulēs for his help with the bibliography on western finds. For Late Byzantine arrowheads, see Babuin, Ta epithetika opla tōn Vyzantinōn 181-194, with further bibliography. For Late Byzantine arrowheads from Serbian fortresses, see Minić/Vukadin, Srednjovekovni Stalać 111-117, with further bibliography. On crossbows or βαλλιστρίδαι, see Babuin, Ta epithetika opla tōn Vyzantinōn 207-240, with further bibliography.

276 Metcalf, The Coinage of Thessaloniki 277-288. – Metcalf, Coinage in the Balkans passim. Metcalf, Coinage in South-Eastern Europe passim. – Bendall/Protonotarios, Further Rare and Unpublished Coins 178-180. – Morisson, Byzantine Money 914, 926, 959-962.

277 On *Voulōteria* (βουλωτήρια) see Grierson, Byzantine Gold Bullae 247 fig. 9. – On lead seals from Thessaloniki, see Kissas, Molyvdovoulla 185-202. – For a detailed publication of the total of lead seals which have been found in Thessaloniki and its region, see Leontiadēs, Molyvdovoulla passim.

278 Theodōridēs, To ktēmatologio 417 (**cat. no. 68**). Also on the site see Lefort, Villages de Macedoine 136-38, and Sampanopoulou, Katalogos 91-92.

279 Theocharidou, Enkatastasē 27-28. – Eadem, Orycheio Peristeras 408 (**cat. no. 76**). – Generally on metallurgy and metalworking techniques throughout the Byzantine era, see Papathanassiou, Metallurgy 121-127, with further bibliography.

280 Pelekanidēs, Anaskaphē 38-41.



Fig. 29 Lead seal of Leōn, *vasilikos prōtospatharios* and *stratēgos* of Thessaloniki, c. 920-940.

sphragidia (σφραγίδια), pilgrim tokens made of a non-durable material, since no stamped examples have yet been discovered (**fig. 30**). It depicts in negative relief the bust of Christ on the Cross flanked by the Apostles Andrew and possibly Paul, who were, in all probability, considered to be the founders of the Thessalonian Church[281].

Lentoid lead ampullae (**fig. 31**), known to Thessalonians as *koutrouvia* (κουτρούβια)[282], were produced locally, probably by or under the auspices of the local Church, between the tenth and thirteenth centuries for pilgrims to the shrines of the two myrrh-producing saints of Thessaloniki, Saints Dēmētrios and Theodōra[283]. They are simple, apparently mass-produced objects cast in a mould, formed by the joining of their two, slightly convex sides that bear a simplified, linear and occasionally carelessly executed relief decoration. They appear in two versions, with a short or long funnel mouth decorated with rinceau, with the representations of Saint Dēmētrios on the one side and the Mother of God or Saints Theodōra, Georgios, or Nestor on the other side in medallions surrounded by a wide frame with oblique strokes. A hitherto unnoted and unpublished single stone mould of a *koutrouvion*, having a long funnel mouth and the bust of the Mother of God on its body, was found during salvage excavations in the Byzantine neighbourhood excavated west of Saint Dēmētrios.

It appears that the same needs that were met for ordinary pilgrims with the lead *koutrouvia*, for wealthier and more important people, were met with reliquaries for *lythron* or *myrrh* of Saint Dēmētrios. These were made of precious materials depicting the saint's sarcophagus and the ciborium covering it, both of them bearing the image of the saint. On the interior, i. e. on the sarcophagus, he is depicted with arms crossed and eyes closed, and on the exterior cover, i. e. on the ciborium, he is depicted as a standing orant[284]. Judging by the



Fig. 30 Stone mould with Christ flanked by two apostles, Thessaloniki, Hagios Dēmētrios, eighth century.

281 Mentzos, A Stone Mould 18-24.

282 Iōakeim Ivēritou, Iōannou Staurakiou logos, 353:25-28: »καὶ ἠσπάσατο καὶ σκεῦος τι, ὡς ἐδόκει, φέρων χερσίν, ὃ δήτα ἐγχωρίως καλεῖται κουτρούβιον, τοῦτο τῶν ἀναβλυζόντων ἐκεῖθεν μύρων πεπλήρωκεν« [he kissed (the saint's relics) and holding as was meet a receptacle in his hands called by the locals *koutrouvion*, he filled it with the myrrh gushing forth from there].

283 Bakirtzēs, Koutrouvia myrou 523-528. – Bakirtzis, Byzantine Ampoulae 140-149. – Cat. Athens 2002, 184-185 nos. 203 (Ch. Bakirzis), 204 (V. Papadopoulou), 205 (E. Gini-Tsofopoulou). – On Saint Theodōra see A.-M. Talbot, Holy Women 159-237. – On Thessalonian *koutrouvia* bearing the bust of Saint Dēmētrios and Mother of God found in what is today Bulgaria, see Totev, Ampuli kutruvii 205-216, 411-416. On two more from the Prespa region, FYROM and three more from Serbia, see Bitrakova-Grozdanova, Golem Grad Prespa 95-100, with further bibliography. For a thorough catalogue of lead ampoules, encolpia and icons found in Bulgaria, dated to the twelfth to fifteenth centuries and attributed to Thessalonian workshops, see Totev, Thessalonican Eulogia Found in Bulgaria passim. – Loverdou-Tsigarida, Thessalonique, centre de production 243 nt. 12, makes the interesting note that all extant *koutrouvia* were found outside of Thessaloniki, apparently belonging to pilgrims from remote areas who kept them on their persons as *phylacteria* for a considerable period after visiting Thessaloniki.

284 Grabar, Quelques reliquaires 3-28. – Grabar, Un nouveau reliquaire de S. Démétrius 305-313 esp. 307. – Cat. New York 1997, 161-162, 167-168, 174, nos. 108 (W. D. Wixom), 116 (D. Katsarelias), 117 (I. Kalavrezou), 125 (S. A. Boyd). – Loverdou-Tsigarida, Thessalonique, centre de production 241-254 esp. 243-244. – Bakirtzis, Imports, Exports and Autarchy 100. – For an epigram of Manuel Philes that was written for a silver reliquary probably like these, possesion of Dēmētrios Palaeologos, see Frolow, Un nouveau reliquaire 100-110. – Loverdou-Tsigarida, Thessalonique, centre de production 244.



Fig. 31 Lead ampulla, Rentina, thirteenth century.



Fig. 32 Touchstone, Thessaloniki, 3 Agapēs Street, Middle Byzantine period.

reliquaries and some preserved encolpia[285] and crosses[286], it appears that local thirteenth-century jewellers also used enameling for the decoration of metal objects.

In addition, the discovery of a touchstone (**fig. 32**) – a piece of black basalt, known in the Byzantine era as *lydia lithos* (λυδία λίθος) or *vasanos lithos* (βάσανος λίθος) – dated to the Middle Byzantine period, attests to the presence of goldsmiths and money changers, *katalaktai* (καταλάκται) – both occupations that would require the use of a touchstone to establish gold purity – at the very centre of city, as one might have expected[287]. The diversity of used and possibly locally produced jewels, both precious and most often simpler ones, is evident from the numerous archaeological finds[288].

Finally, important information concerning the activity of local metal production can be found in the written sources, such as the fact that gold and silver embellishments and revetments supplemented the decoration of the city's churches[289]. In particular, there are two surviving references to the silver cover of the Saint Dēmētrios reliquary. The earliest (from 1145), was made by Deacon Nikasios who noted that by order of the Emperor Manuel Komnenos the curved outer cover was taken to the Pantokratōr Monastery in Constantinople while a new one of silver and gold was made to replace the original[290]. The second reference is dated to 1185, during the Norman occupation of the city, when axes were used to remove the exterior silver decoration of Saint Dēmētrios' grave and the gold wreath over the saint's head, along with the icon revetments that were made of precious materials from the churches. After the intervention of the Archbishop

285 For an encolpion preserved in Vatopaidi Monastery see Ikonomaki-Papadopoulou/Pitarakis/Loverdou-Tsigarida, Enkolpia 74-75 no. 22.

286 For a cross-shaped reliquary originally from Mount Athos, now in the Dumbarton Oaks Collection, see Cat. New York 1997, 174, no. 125 (S. Boyd). For another cross-shaped reliquary similar to the former in the Grassi-Museum, Leipzig, see Effenberger, Ein byzantinisches Emailkreuz 114-127.

287 For references in Byzantine texts on *argyropratai* (ἀργυροπράται) and chrysochooi (χρυσοχόοι), makers and shellers of silver and gold objects, their trade, tools, workshops and personnel, see Koukoules, Vios kai politismos, B1, 224-225 and B1, 228-229. – The touchstone presents a find from the excavation north-east of Hagia Sophia, at 3 Agapēs Street (**cat. no. 53**): Cat. Athens 2002, 107 no. 97 (I. Kanonidēs). – For similar finds from Frankish Thebes, see Koilakou, Viotechnikes enkatastaseis esp. 235 figs 8-10. – For terms relevant to the find and the procedure, see Koukoules, Vios kai politismos, B1, 226-227.

288 Antonaras, The Use of Glass in Byzantine Jewelry 331-334. – On Middle Byzantine glass bracelets, see Antōnaras, Gyalina mesovyzantina vrachiolia 423-434. – For a short overview of Middle and Late Byzantine jewellery from Thessaloniki and its region, see Antonaras, Middle and Late Byzantine Jewelry 117-126. – For a thorough presentation of Middle Byzantine jewellery in general and an exceptional classification of all relevant forms, as well as a detailed discussion of the two Middle Byzantine jewellery hoards from Thessaloniki, see Bosselmann-Ruickbie, Byzantinischer Schmuck passim esp. 18-57, 91-125.

289 Kaminates §11.1, referring to the decoration of Hagia Sophia, Acheiropoiētos and Hagios Dēmētrios §21.3, referring to the gold and silver decorations of the aforementioned churches.

290 Papadopoulos-Kerameus, Analekta IV 238-246: »τὴν ἱερὰν σκέπον σορὸν διαπρύσιον προκάλυμμα … ὄρθιον φέρον τὸν μέγαν Δημήτριον, ἐκτεταμμέναις παλάμαις […] ἀκολούθως τῇ βασιλικῇ προστάξει ἕτερον ἐτέθη κατασκευασθὲν διά τε χρυσοῦ καὶ ἀργύρου« [the holy remains were covered by a protruding cover (truncated pyramidal) which was bearing Saint Dēmētrios standing with palms extended (…) and after the royal command, another (cover) of gold and silver was placed]. – Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 139. The exact translation of the text (especially of the word »διαπρύσιον« used in the archaic manner of the writer with its Homeric meaning of »protruding«, »piercing into«) proves that the outer cover was protruding and must have been similar to the truncated-pyramidal ones rendered in the silver reliquaries of the ciborium. – On the reliquaries and the shape of the cover, without any comments about the wording of Nikasios, see Xyngopoulos, To »prokalymma« 187-199.

Eustathios of Thessalonica, Count Baldwin donated gold and silver to restore the plundered decoration[291].

From the sources it is also known that a special artisanal quarter, a portico of the coppersmiths, existed[292]. In the same way, we know that other coppersmithing works existed, such as the large bells of Hagios Dēmētrios[293], hot-water boilers[294], and silver and gold-plated harnesses for the horses of local dignitaries[295]. In addition, the iron chain that secured the mouth of the port[296] and the ironclad wooden doors of the city must have been made and repaired by local blacksmiths[297], as were the weapons[298] and fine locks that private citizens kept in their houses[299].

Stoneworking

According to written sources, a sculpture workshop was active in the city in the late ninth century. Here such items were made as the sarcophagus of Saint Hilarion of Iberia in 875 and the decorated marble sarcophagus of Saint Theodōra in 893[300]. Marble icons are another known local product. They are a rarity in the Byzantine world, known mainly in the Post-Iconoclasm period, especially from the tenth to twelfth centuries. They are rectangular plaques, usually framed, occasionally with an arched top, on which are rendered, following painterly prototypes, single figures of holy persons or, rarely, evangelical scenes, mainly of the Twelve Great Feasts. They were fixed on walls in churches as a focus of worship, or on gates of buildings or city walls for protection[301]. Seven Middle Byzantine examples have been found in Thessaloniki, all depicting the Mother of God Orans (**fig. 33**), and two Late Byzantine ones, an unfinished Christ and a Hosios David[302].

An eleventh-century workshop, the products of which have been found in several sites in Macedonia and Epirus, with several plaques found in the city belonging to its repertoire, has been assumed to be from Thessaloniki[303]. In addition, parts of ciborium arches from Hagios Dēmētrios and other churches of the city have been ascribed to the same workshop[304]. Several inscriptions preserved from this period indicate another type of simpler work created by local sculptors[305].

Another local product is the marble closure slab with a griffin rendered in soft relief on a polished background with some details rendered with incisions, dated to the late tenth

291 Eustathius, La espugnazione, 114:29-31: »καὶ τὰ μὲν τῶν σεβασμίων τυπωμάτων κατασχίζοντες, ὅσα μηδέν τι γλαφυρὸν ἐκ τιμίας ὕλης εἶχον, τὰ δὲ ψιλοῦντες τοῦ κατ᾽ αὐτὰ κόσμου μετὰ πληγῶν« [and they were tearing up the venerable icons, at least those not encased in precious metal, while from others they were stripping away their decoration with blows]; 116:11-15: »ὁποῖον καὶ τὸ τοῦ Μυροβλύτου, οὗ τῷ τάφῳ ἐμπεπαικότες μετὰ πελέκεων […] τόν τε πέριξ ἐπιπολάζοντα κόσμον ἐξ ἀργύρου κατέκοψαν καὶ τὸν ὑπὲρ κεφαλῆς δὲ περιείλοντο χρύσεον στέφανον καὶ μὴν καὶ τὸν ἕτερον ἀπήγαγον τοῖν ποδοῖν« [on the myrrh-gushing saint. They rushed to his grave with axes (…) cut away the abundant silver decoration surrounding the grave, stole the gold wreath covering the saint's skull, and removed the bones of one of his legs]; 126:32-34: »καὶ τῷ τοῦ ἁγίου τάφῳ ἄργυρον καὶ χρυσὸν ἐχορήγησε, τὸν ἀρκοῦντα εἰς ἀναποίησιν τοῦ ἐλλείψαντος.« [and he donated silver and gold for the tomb of the Saint, enough to replace what had been stolen.]. The same count also donated valuable ceremonial items, 126:35-36: »πήγματα δὲ κηρῶν ἀργύρεα μεταφορητὰ ἐν ἱεραῖς εἰσόδοις λόγου ἄξια ἐχαρίσατο·« [he also donated to the church notable silver candelabra used for the processions of Entrances]. – Messēs, Chronika 273, 274, 283.

292 A *Chalkeutikē Stoa* (Χαλκευτικὴ Στοὰ) is mentioned in *Passio Altera* γ' of Saint Dēmētrios' miracles, which was compiled sometime between the sack of 904 and the end of the thirteenth century, see: Tafrali, Topographie de Thessalonique 126 nt. 2. – Bakirtzēs, Agiou Dēmētriou Thaumata 37, 350 nt. 4; Bakirtzis, Imports, Exports and Autarchy 99 nt. 55: »ἐκ δυσμῶν του τῆς πόλεως μεγαλοφόρου ἐν τῇ ἐκεῖσε Χαλκευτικῇ λεγομένῃ στοᾷ.« [in the western part of the city's *Megalophoros*, in the so-called *Chalkeutikē Stoa*].

293 Eustathius, La espugnazione 136:12-14. »Τότε δὴ καὶ ἐπῆλθεν ἡμῖν ἀπορῆσαι τί δήποτε τοὺς μὲν ἄνω περὶ τὸν τοῦ Μυροβλύτου ναὸν σημαντικοὺς τοῦ ψάλλειν μεγάλους κώδωνας οὐχ ὑποπτεύουσι, τὸ δὲ περὶ τὴν μητρόπολιν συνθηματίζον ξύλον τὴν ἱερὰν σύναξιν βαρέως φέρουσι.« [I had wondered at the time why they were not in the least suspicious of the large bells atop the church of the myrrh-gushing saint [Dēmētrios] which signalled the chanting in the church, whereas they distrusted the *semantron* [wooden or iron beam or plank] of the metropolitan church that signalled the gathering of the congregation for services]. – Messēs, Chronika 290.

294 Saint Theodōra, Life §31.5-7: »συνέβη δὲ τὸν τοῦ θερμοῦ λέβητα στῆσαι τὰς ἀδελφὰς ἐν τῷ τόπῳ, ἔνθα ἡ μακαρία τὸ ψιάθιον ἐπ᾽ ἐδάφους ἁπλώσασα ἐκάθευδεν« [the nuns happened to install the boiler in the place where the deceased woman slept, spreading her mat out on the ground]. – Bakirtzis, Imports, Exports and Autarchy 111.

295 Vlachakos, Timariōn §7.189: »Ἵπποι δε τούτοις Ἀῤῥαβικοὶ […] ἐδόκουν συνιέναι καὶ τῆς περικειμένης λαμπρότητος, ὅση ἐν χρυσῷ καὶ ἀργύρῳ τοὺς χαλινοὺς περιέλαμπεν ὥσπερ ὑποτερπόμενοι τῇ τῆς περιβολῆς φανητίᾳ καὶ πυκνὰ τοὺς τραχήλους περιελίττοντες τοῖς στιλβώμασιν« [Their horses were Arabian (…) They (the horses) seemed to understand the splendour surrounding them, that which made their reins shine with gold and silver, and they frequently turned their necks with these shiny ornaments, as if they enjoyed their superb equipage].

296 Mentioned by Kaminiates securing the entrance to the port during the Arab siege and sack of the city at 904, Kaminiates §25:1: »ἔτι δὲ καὶ τὸν πορθμὸν τοῦ λιμένος ἀλύσει σιδηρᾷ καί τισι ναυσὶ βεβυθσμέναις ὄντα κατάφρακτον« [furthermore, the entrance to the harbor was well-fortified with an iron chain and some sunken ships]. Iron chains were also used by the Arabs to secure their ships in pairs in order to create improvised towers from which they could attack the low seaward defence wall of the city, Kaminiates §32.5: »Καί τισι κάλοις στιβαροῖς καὶ σιδηραῖς ἁλύσεσι« [with thick ropes and iron chains].

297 Kaminiates §31.4: »τὴν μὲν ἔξω τῶν πυλῶν ἐπιφάνειαν, ἥτις ἦν ἅπασα σεσιδηρωμένη« [The exterior of the gates was clad entirely in iron]. – Bakirtzis, Imports, Exports and Autarchy 111.

298 Kaminiates §23.2: »ὁπλιζομένων τε πάντων ὡς οἷόν τε ἦν« [and everyone armed themselves as best they could]. – Bakirtzis, Imports, Exports and Autarchy 111.

299 Although the term key is used by cleric Grēgorios it seems that he was using it in the figure of speech of *synecdochy* (*pars pro toto*), referring to the entire securing system, the lock used to seal the reliquary. Saint Theodōra, Translation §4.1: »προσέφερε τις θαυμασίαν κλεῖδα, ὁποίαν οὐδεὶς τῶν τῆς καθ᾽ ἡμᾶς πόλεως θεασάμενος ἦν« [A wonderful key was offered (for the saint's reliquary), the like of which no one in the city had ever seen before]. – Bakirtzis, Imports, Exports and Autarchy 111.

300 Bakirtzis, Imports, Exports and Autarchy 109 nt. 109. On the sarcophagus of Saint Theodōra, see Saint Theodōra, Translation §3.7-8: »λάρνακα κατασκευάσασα ἐν αὐτῇ κατέθετο τῆς ὁσίας τὸ λείψανον« [she constructed a casket in which she deposited the saint's relics]; §3. 20-21: »ποικίλως γλυφίσιν ἔξωθεν ταύτην διακοσμήσαντες« [and they decorated its exterior with various kinds of sculpted ornamentation]. About the creator, a sculptor who was also a priest, see Saint Theodōra, Translation §3.17-24: »καὶ δή τινα λιθοξόον προσκαλεσάμενοι, τῇ τοῦ πρεσβυτέρου τετιμημένον ἀξίᾳ« [And indeed, they invited a certain stoneworker, who had been accorded the honour of priesthood]. – On saint Hilarion, see Malamut, Thessalonique 830-904, 185, with further bibliography. – Also Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 107. – According to Bakirtzis, op.cit., it is not clear whether it was a newly constructed sarcophagus or an old one. – For parts of a twelfth to thirteenth-century marble templon and a sarcophagus found in the excavation of the monastery, see Cat. Thessaloniki 2001, 8.

301 Lange, Die byzantinische Reliefikone passim.

302 Tsilipakou, Vyzantines marmarines eikones, on the Middle Byzantine icons 304-317, 328-340, 344-351, on Hosios David 317-328, on Christ 340-344.

303 Pazaras, Anaglyphes sarkophagoi 134-135, 164. On the workshop, see also Vanderheyde, Les reliefs 708.

304 Mentzos, Ergastērio glyptikēs 217-230.

305 Tsigaridas/Loverdou-Tsigarida, Katalogos 94-97, 101-102, 104, 106.



Fig. 33 Marble icon of Mother of God Orans, Thessaloniki, eleventh century.

or early eleventh century[306] (**fig. 34**). Finally, another type of marble work found in Thessaloniki during this period is the relief icon of the Great Deesis with four standing figures of the apostles at Vlatadōn Monastery, dated to the tenth century (c. 900). It is a combination of champlevé and painting, giving an effect similar to *cloisonné* enamel. The outlines of the figures and the folding of the clothes are in relief, while the inner part of the figures in counter-relief was filled with a coloured resin[307].



Fig. 34 Marble closure slab with a griffin, Thessaloniki, late tenth to early eleventh centuries.

Mosaics

The presence of a mosaic workshop, perhaps even only a temporary one, can be deduced from several finds (**fig. 35**). Foremost is the mosaic decoration of Hagia Sophia, dating to the eighth, ninth, tenth and twelfth centuries[308]. In addition, excavations near the church have uncovered glassworking remains, such as glass cakes – from which mosaic tesserae were broken off – and other forms of rectangular and circular flat glass tiles, of some form of *opus sectile* (possibly insets in marble sculptures)[309].

Painting

»Iōannēs« is the only painter known by name. According to the cleric Grēgorios, he was a late ninth-century artist who painted the icon of Saint Theodōra after a miraculous vision[310]. However, the archaeological record shows that paint-

306 Pazaras. Katalogos plakōn 88-89 pl. XXX:55. – Cat. Thessaloniki 2011b, 164-165 no. 80 (A. Tzitzibasi).

307 Sklavou-Mavroeidē, Glypta Vyzantinou Mouseiou 92 no. 128. – Cat. New York 1997, 43 fig. no. 9 (M. Catzidakis).

308 Pelekanidis, I mosaici 337-349. – Pelekanidis, Bemerkungen 29-40. – Cormack, The apse mosaics 111-135. – Bakirtzēs, Neōteres paratērēseis 167-180. – Mauropoulou-Tsioumē, Zōgraphikē 393-410. – Kourkoutidou-Nikolaidou/Mauropoulou-Tsioumē/Bakirtzēs, Psēphidōta Thessalonikēs 238-295 esp. 290-294.

309 Cat. Athens 2002, 119-120 no. 115a (I. Kanonidēs), dated generally to the Middle Byzantine period (**cat. no. 107**).

310 Saint Theodōra, Life 171-177, §52-54: »ὤφθη ζωγράφῳ τινὶ τοὔνομα Ἰωάννῃ […] ὄψις ὀνειράτων τοιαύτη […] καὶ τῇ νυκτὶ ἐκείνῃ πάλιν ὁρᾷ ἑαυτὸν ὁ ζωγράφος σκιαγραφοῦντα εἰκόνα μοναχῆς…. Παραγενόμενος εἰς τὸ μοναστήριον […] ἀνεστήλωσεν τὴν τῆς ὁσίας Θεοδώρας εἰκόνα« [A vision appeared to a painter by the name of Iōannēs (…) and that night the painter again saw himself sketching (painting) the picture of a nun (…) he arrived at the nunnery (…) (and) restored the icon of Saint Theodōra].



Fig. 35 Hagia Sophia, wall mosaic, Ascension, Mother of God flanked by two angels, ninth century.

ers, specifically mural painters, were employed throughout this period of Thessaloniki's history[311]. The surviving examples are: an anonymous church excavated in the city centre at the junction of Egnatia and Dēkastēriōn Streets (today's Mētropolitou Gennadiou) decorated with rows of gemmed crosses flanked by columns dating to the first half of the ninth century[312]; a funerary chapel at 90 Kassandou Street in the eastern part of the city, decorated in the first half of the ninth century with three gemmed Latin crosses with dedicatory inscriptions flanked by columns on one wall and on another wall with imitations of marble incrustations[313]; a late ninth-century mural of the Ascension[314] in the apse of the Rotonda, which is considered to be the creation of the same workshop that produced the similar mosaic of the Ascension on the dome of Hagia Sophia[315]; the Panagia Chalkeōn[316] and Hosios David[317] were also decorated in this period; and finally, remains of the tenth century wall painting found during the excavation of a private house on the site of the Byzantine Monastery of Prodromou[318]. Furthermore, two small wooden icons from the epistyle of a templon, depicting scenes of the Dodekaorton, the Resurection of Lazarus and the Transfiguration respectively, have been ascribed to a Thessalonian workshop of the second half of the twelfth century[319].

In a poem dating from 1074 or 1075, we catch a glimpse of the originality of secular paintings decorating aristocratic houses in Thessaloniki. During the renovation of the house of Leōn Sikountēnos, a mural painting is described in which religious themes were supplemented by contemporary figures and scenes, such as the Byzantine Emperor Manuel Komne-

311 On ninth-century painting in Thessaloniki in general, see Mauropoulou-Tsioumē, Zōgraphikē 393-410.
312 Euangelidēs, Eikonomachika mnēmeia 341-351 figs 5, 5a, 7, 7a.
313 Makropoulou/Tzitzimpassē, Sōstikē anaskaphē 361-364.
314 Xyngopoulos, Toichographia Analēpseōs 32-53.
315 Cormack, Ninth Century Monumental Painting 198-199 [non vidi], according to Tsigaridas, Toichographies monēs Latomou 100 nt. 57. The same conclusion is reached by Mauropoulou-Tsioumē, Zōgraphikē 409, where she dates them to c. 880.
316 Euangelidēs, Panagia Chalkeōn passim. – Xyngopoulos, Apolestheisai toichographiai 1-19. – Papadopoulou, Die Wandmalereien passim. – Mauropoulou-Tsioumē, Byzantine Thessaloniki 104-110.
317 Tsigaridas, Toichographies monēs Latomou passim, and 149-156 for a thorough overview of painting in twelfth-century Thessaloniki.
318 Cat. Athens 2002, 269 no. 265 (E. Markē).
319 Vokotopoulos, Vyzantines eikones 198-199 figs 30, 31. – Tsigaridas, L'art au Mont Athos 48 with all relevant bibliography.



Fig. 36 Rotonda, wall painting, Ascension, detail with an angel, ninth century.

nos depicted next to the histories of Moses and Joshua[320]. However, the uneven quality of the art of Thessalonian painters was mentioned in the late twelfth century by Eustathios of Thessalonica, who commented that many painters existed in his city but not all of them were skilful[321] (**fig. 36**).

Textile Production

We can state that the weaving of linen, cotton and wool and the production of everyday items with them took place in Thessalonian households, but it is also quite probable that this took place in specialised workshops as well[322]. It is known from textual sources that fabrics of all types and qualities were woven by both men and women[323]. After visiting the

320 Hunt, Comnenian Aristocratic Palace Decoration 139. – For the Greek text (MS Venice, Cod. Marc. gr. 524 fol. 22v-23r) see Lampros, Markianos 29-30. – A part of the translation into English from Mango, Sources 225-226. I thank Prof. I. Kazazēs for his help in the translation of the text and Debora Brown Kazazē for the translation into English: »Καινὸν τὸ βάθρον ὧδε τοῦ δόμου, ξένε, / ἐκ τῶν ἄνω στήριγμα τοῖς κάτω νέμον· / τῶν ἄρετῶν γὰρ ἐπερείδεται πλέον / τοῖς ἐντὸς ἐκτὸς εἰκονισμένοις τύποις, / ἃς καὶ καθ'αὑτὰς ζωγραφῶν ὁ τεχνίτης / ἔργοις βεβαιοῖ σχημάτων τὸ ποικίλον, / ἄνδρας γεραροὺς δεκτικοὺς τούτων γράφων, / Μωσῆν …, / καὶ … Ἰησοῦ τοῦ Ναυῆ…· / Τοῖς δ' ἀρχαϊκοῖς καὶ τα νῦν συνγεγράφει / τοῖς στρατιώταις οὐρανῶν βασιλέως / συνιστορῶν ἄνακτα γῆς στεφηφόρον / τὸν πορφυραυγῆ τῆς νέας Ῥώμης στύλον / Κομνηνοφυῆ Μανουὴλ ἐθνοκτόνον,… / …. Ἀραγὴς τοίνυν μένε [δόμε] / καὶ σὸν νεουργὸν ἐν μακροῖς τέρπε χρόνοις / Σικουντηνὸν Λέοντα σὺν τοῖς γνησίοις« [Novel is the base of this house, o stranger, / providing support to the lower from the upper / because it leans more on the virtues / of the figures depicted inside and outside / the same those that by painting them the artisan / by his works affirms the polychromy of the figures / by painting imposing men, fitting for them, / Moses… / And Joshua… / To these ancient [subjects] he [the artist] has added those of the present time / the soldiers of the heavenly King / by painting alongside the crowned Emperor of the earth, / the pillar of the New Rome shining in the purple, / Manuel, the descendant of the Komnenoi, slayer of alien peoples / And [house] stay without a crack / and delight for many years your renovator / Sikountēnos Leōn with his children].

321 Eustathius, Opuscula XIV. Πρὸς τοὺς ἐπεγκαλοῦντας αὐτῷ μνησικακίαν, 98, § 2, ln. 28-31: »ὅτι μὲν γοῦν ἡ καθ' ἡμᾶς πάμφορος πόλις αὕτη γραφέων εὐπορεῖ, οὐ πάντων πρὸς τέχνης, ἀλλά που καὶ φαύλως γραφόντων ἀνθρωπικοὺς χαρακτῆρας καὶ ἀχρειούντων, καὶ ἄλλας μὲν εἰκόνας ἐν δὲ καὶ ταῖς τὴν ὑμετέραν…«. [For our city, which has everything, is rich in painters, not all of whom depict human figures/portraits skilfully, but rather poorly and worthlessly, while (others paint) other representations, including your own…]. The archbishop actually refers in his text to a caricature, released by his opponents in Thessaloniki and Constantinople which was also accompanied with the caption: »Here's a resentful man that we have him bishop of Thessaloniki«, p. 98 ln. 28-64. – On an icon of Saint Dēmētrios brought to Constantinople by Manuel I from Thessaloniki in 1149, apparently of a higher quality than those castigated by Eustathios see Gautier, Le typikon du Christ Sauveur Pantocrator 21-23. – Thomas/Constantinides, Byzantine Monastic Foundation Documents 725-726, with prior bibliography.

322 Dagron, The Urban Economy 444-445.

323 According to Eustathios of Thessalonica, Eustathius, Opuscula 223.17-18: »Ἡ γάρ οὐκ οἴδαμεν ἄνδρας, τοὺς μὲν ἱστὸν ὑφαίνοντας ὀλίγου τιμώμενον, καὶ μόγις δι' ἡμέρας ἀποφερομένους κέρδος τοῦ καμάτου νούμμους εὐαριθμήτους ….« [Moreover, do we not know men, some of whom weave sailcloth for a small price…]. He refers to the difference with ancient Greek society where only women were weavers, apparently in contrast to what was accustomed in his own society. – Also, in *Timariōn* (Vlachakos, Timariōn 56, §6.148) products sold in the trade fair of Saint Dēmētrios are mentioned as »ὑφάσματα καὶ νήματα ἀνδρῶν τε καὶ γυναικῶν«; interpreted by Phaidōn Koukoules as »fabrics and threads of both men and women«. – For further references to Byzantine texts on the same matter, see Koukoules, Vios kai politismos, B1, 215-217. – Kaminiates described the great quantities of silk, linen and woollen fabrics, among other valuables treasured in the houses of Thessalonians in his account of the sack of Thessaloniki by the Arabs in 904 (Kaminiates §58.7-8): »ὅση διὰ σηρικῆς ἐσθῆτος εὐπρεπὴς ἦν καὶ ὅση διὰ λίνου τοῖς ἀραχνείοις ἤριζεν ὑφάσμασιν, ὡς ὄρη καὶ βουνοὺς ἐκτελεῖσθαι τὰς τούτων σωρείας, ἄλλων ἐπ' ἄλλοις ἐπιτιθεμένων καὶ τὸν ὑποκειμενον τόπον πληρούντων. Χαλκῶν γὰρ καὶ σιδηρέων σκευῶν ἢ τῶν ἐξ ἐρίων ἐσθημάτων οὐμενοῦν οὐδ' ὅλως ἐφρόντισαν, περιττὴν ἡγούμενοι τὴν κτῆσιν αὐτῶν« [such as gorgeous silk and linen garments rivaling gossamer materials. All these were piled up, forming hills and mountains thrown one atop the other and entirely covering the space. They gave no importance to objects of copper and iron or to woollens. They considered their possession unnecessary].

city, Benjamen of Tudela noted in 1155, when the Byzantine economy was flourishing, that the five hundred Jews of the city were mainly occupied in technical artisanal activities, and specifically with sericulture[324]. There is also indirect evidence for a local guild of hat makers in the city in 1097, when Iōannēs Armenēs the head of the hat makers' guild (πρῶτος τῶν καμαλαυκάδων) witnessed a contract[325]. There is only one, or possibly two, Middle Byzantine dyeworks attested archaeologically, in the north-east of the city[326]. Finally, although there are references in written sources[327] and archaeological finds from the wider region[328] (**fig. 37**) concerning gold and silver weft clothes, such evidence only indicates their use and not their local production. The official character and ease of transportation of such garment makes it likely that they were imported from elsewhere.

Furriery

The presence of furriers in the city is only known through a legal document from 1097. This is a contract of sale of a vineyard witnessed by two furriers, Theodōros son of Christophoros and Leōn Sinadinos[329].

Bonecarving

No particular finds indicate the local production of bone objects in Thessaloniki in this period. However, the fact that artefacts of this kind were present in the city is attested by finds from various salvage excavations, including a cylindrical beaker, crudely executed Corinthian capitals – one of them possibly not totally finished – and elongated tool handles, probably for knives[330].

Woodworking

From the work of Kaminiates and the *Vita of Saint Theodōra* we can deduce that local carpenters were engaged in the production of furniture (beds and couches), farmers' carts and small fishing boats, among other things[331]. Other written sources, such as Eustathios of Thessalonica, offer further indirect information on the extended use of wooden vessels in everyday life in Byzantium[332].

Basket and Mat Weaving

Mats and basketry products appear to have been a widespread commodity, especially given the topography of Thessaloniki, surrounded as it is by four rivers, two lakes, several streams and large areas of marshland, all ideal habitats for reed, cattail and sedge[333]. So widespread were such products that even in times of great disaster and shortage they could be found easily, or even thrown away in the streets. When Archbishop Eustathios described the sack of Thessaloniki by the Normans in 1085, he noted how the women of the city were disguised as soldiers using mats in an attempt to give the Normans an exaggerated impression of the city's garrison during the siege[334]. He also told of a poor Thessalonian whose only clothing was a piece of mat that he had pierced

324 Kōnstantakopoulou, Vyzantinē Thessalonikē 177. – Moutsopoulos, Evraïkes synoikies 4. – Benjamin of Tudela 64. – Concerning silk production and trade in western Byzantium in the period before the Fourth Crusade, see Jacoby, Silk in Western Byzantium 452-500.

325 Actes de Lavra I 275-278, no. 53 ln. 39. – Dagron, The Urban Economy 418.

326 On the plot at the junction of Paster and Mētropolitē Iōakeim Sgourou Streets, see Cat. Thessaloniki 2002, 17 (**cat. no. 80**). – In the plot at 6 Prasakakē and Koukouphlē Street: Markē, Prasakakē – Koukouflē 337-340 pl. 152a. – Markē, Agia Sophia kai prosktismata 58-59 (**cat. no. 82**). – Probably the workshop that was operating in the eighth to ninth centuries at 52 Agias Sophias Street could be associated with a tannery, see Markē, Agias Sophias 52, 511-515 (**cat. no. 86**).

327 As for instance, the reference to the richly ornated silk garments of the city's Duke garrison in Vlachakos, Timariōn 60-61, §7.185: »οἱ δὲ γε λογάδες αὐτοῦ […] σηρικοῖς καὶ καταστίκτοις ἀμφίοις τὴν περιβολὴν καλλυνόμενοι« [His chosen ones (elite) (…) handsomely attired in embroidered silk garments].

328 For the single Middle Byzantine, probably eleventh-century, silk, gold-weft tissue excavated in the Macedonian area, see Moutsopoulos, Le tombeau 114-126, for the excavation, and Antonaras/Kavasila, Gold Weft Tissue 14-15, for the tissue.

329 Actes de Lavra I, 275-278, no. 53 (ll. 37, 40). – Dagron, The Urban Economy 418.

330 For bone objects ascribed to the Middle Byzantine period, see Cat. Thessaloniki 1986b, 89-90 nos 8-10. The possibly unfinished capital that was unearthed in the salvage excavations at 27 Kōnstantinou Palaiologou Street in 1997 is hitherto unpublished.

331 Kaminates §31.2: »ἁμάξας ἐφευρόντες ἐπέθηκαν ἐν αὐταῖς πρηνεῖς τὰς βραχυτάτας νῆας, αἷς πρὸς τὴν θήραν τῶν ἰχθύων οἱ καθ᾽ ἡμᾶς ἁλιεῖς ἐκέχρηντο« [They found some wagons and on them they placed upside down small boats, which our fishermen use for fishing]. – Bakirtzis, Imports, Exports and Autarchy 108.

332 Sarantē, Ta vyzantina epitrapezia skeuē 536-541.

333 Saint Theodōra, Life §31.9-10: »ἐπὶ ξηρᾶς γῆς τῷ ψιαθίῳ καὶ τῷ κωδίῳ διαναπαύετο« [she was resting on the mat and the sheepskin placed on the dry ground]; §32.30: »τὸ ἐν ᾧ καθεύδεις κώδιον« [The sheepskin on which you sleep]. – Bakirtzis, Imports, Exports and Autarchy 111. – In the area even today, reed, cattail and sedge are indigenous plants, all of them until recently widely used for the production of mats and baskets in Thessaloniki and the surrounding area. This type of workshop was mainly concentrated in the south-western part of the city, outside the western city wall, where some of them are still operating even today. For a toponym *Kalamokope[i]on* (καλαμοκόπε[ι]ον), i. e. site where reed is cut, in the same area, mentioned in acta at 1047 and 1290, see Actes d'Iviron I no. 29, ln. 31 and Actes d'Iviron II no. 52 ln. 262. It is mentioned that the monastery of Ivērōn from Mount Athos possessed a dependency in the region of Bourgou with lands near the marsh of Kalamokopion and even a part of the reeded area; *kalamōnas* (καλαμώνας), was still covered by them *hypokalamos* (ὑποκάλαμος). Here, unsurprisingly, the church and a house were *kalamostegos* (καλαμόστεγος), i. e. their roofs were thatched with reed, according to the detailed description of the buildings provided in the act, Actes d'Iviron II no. 52 ln. 265-272. In the same document another *kalamōnas* is noted to exist in the monastery of Hagia Varvara, in the quarter of the Hippodromion at the eastern end of Thessaloniki, Actes d'Iviron II no. 52 ln. 380. – For a possible identification of the site *Xeropotamos* with an older route of nowadays Dendropotamos watercourse see Malamut/Grélois, Le port de Thessalonique 140. – On Basketry and Matting in Antiquity, see Forbes, Studies in Ancient Technology, vol. 4, 180-186.

334 Eustathius, La espugnazione, 289:90: »Ὅσαι δὲ καὶ πρὸς ὁπλισμὸν ἐρρύθμιζον ἑαυτάς, ῥάκη καὶ ψιάθους ἐναπτόμεναι, ὡσεὶ καί τινας θώρακας, καὶ τὰς κεφαλὰς μίτραις εἰς ἕλιγμα διαλαμβάνουσαι, εἴ πως στρατιῶται εἶναι σοφίσονται« [and as regards armour, (these women) they arrayed themselves by donning rags and mats that resembled cuirasses, and bound their heads with bands (turban-like) so as to deceptively resemble soldiers].



Fig. 37 Gold-weft silk tissue, Hagios Achilleios, Lake Prespa, eleventh century(?).

and placed on his body[335] and of others who were reduced to wearing improvised mat hats by the conquerors[336].

Ropes of flax and hemp, and textiles, essential for the rigging and sails of ships, for example, must also have been widely produced; especially those of flax, since the plant was also used for production of linseed oil, as well as for the production of yarns for strings and ropes[337]. Acquiring long yarns adequate for weaving linen textiles, required premature harvesting and, at least in modern times, a different type of plant[338].

335 Eustathius, La espugnazione 298:90-299:1: »Ἐτρύπησέ τις ψίαθον καὶ περιβαλόμενος ἔκρυπτε μόγις τὴν προσθίαν αἰσχύνην« [someone opened a hole in a mat and wore it, barely covering his genitals].

336 Eustathius, La espugnazione 298:110: »Πῖλον μὲν γὰρ ἀσκητὸν περιτεθεῖσθαι οἱ εὐτυχέστατοι κατεπλούτουν, τῶν δ᾽ ἄλλων οἱ πλείους ψιάθων πλέγματα ἢ σχοίνων ἢ καλάμης ἐσχεδίαζον εἰς τοιαύτην σκέπη« [the luckiest had the luxury of wearing a well-made hat, while the rest fashioned improvised head-coverings from mats, ropes, or reeds].

337 On references to ropes, rope makers and fishing nets, all of them made with flax, rush and hemp, in Byzantine texts, see Koukoules, Vios kai politismos, B1, 190, B2, 204, E, 331. – On industrial textile plants documented in Macedonia, see Laiou/Morrisson, The Byzantine Economy 66, with bibliography.

338 On Fibres and Fabrics in Antiquity, see Forbes, Studies in Ancient Technology, vol. 4, 1-81 esp. 82-98 on flax and linen. – Patterson, Spinning and Weaving 196-197.

From Armenopoulos we learn that rope making, along with wool laundering, was not a harmless occupation. The sulphur used to bleach the ropes created an unpleasant smell, while the process of smoking the ropes caused frequent fires. Rope making, therefore, had to be undertaken in isolated buildings, unattached to other structures. When it was unavoidable to operate in an inhabited building or to be adjoined to an inhabited one, then the artisan had to sign a written agreement with the neighbour that he would not smoke the ropes with an open fire in the same premises where ropes were stored[339].

Scribal Activity

Hagiological sources, such as the *Vita of Saint Joseph the Hymnographer* from Thessaloniki (d. 842), lead us to suppose that during the ninth century a scriptorium for copying and decorating manuscripts was active in Thessaloniki, probably in the Latomou Monastery[340]. Generally, and within the frame of the teachings of Eustathios of Thessalonica, several scriptoria operated in the city's monasteries, such as that of Akapniou, and also in smaller establishments, such as that of Theotokos of Mastounēs[341]. The name of a copyist active in the Theotokos of Mastounēs Monastery, a certain Theodōros, is recorded[342]. Indirect information on a little known type of scribal work, topographic plans known as *skiagraphiae*i (σκιαγραφίαι), is referred to in the *Praktikon* of Sebastos Iōannēs Komnēnos of 1104, where the property of the Ivērōn Monastery, in the region of Galykos, near Vramodilos, is listed in every detail. It was also mentioned that Iōannēs Proedros Melidōnēs possessed such a plan of his estate neighbouring the monastery[343].

339 Tourptsoglou-Stephanidou, Perigramma 131-132. – Armenopoulos, Procheiron Nomōn 128, 2.4.21: »Ἐπαρχικόν. Περὶ σχοινοπλόκων καὶ ἐριοπλυτῶν. 21. Αἱ τῶν σχοινοπλόκων καὶ ἐριοπλυτῶν τέχναι τοῖς πολλοῖς οὐδὲ νομίζονται λυμαίνεσθαι· ἔστι δὲ ἀπὸ τούτων οὐκ ὀλίγη βλάβη καὶ κίνδυνος· θυμιῶσι γὰρ πολλάκις τὸ θεῖον· καὶ πρῶτον μὲν ἡ τούτων ὀδμὴ ἀηδὴς οὖσα, πολλὴν δυσωδίαν τοῖς ἐνοικοῦσι παρέχει· πολλάκις δὲ καὶ θυμιῶντες ἐνῶσιν ὑπὸ τοὺς σχοίνους ἢ τὴν ἐρέαν τὸ πῦρ καὶ τὸ θεῖον, καὶ ἀπὸ τούτων συνεχὴς καῦσις προσγίνεται τοῖς οἰκήμασι τοῖς παρακειμένοις· μάθησις δὲ τούτων ἡ πεῖρα· πολλάκις γὰρ καῦσις ἐγένετο τοῖς τοιούτοις οἰκήμασιν· ὅθεν χρὴ μονάζειν τοὺς τοιούτους οἴκους καὶ μὴ ἑτέροις ἐπισυνάπτεσθαι. Εἰ δὲ ἀνάγκη τις γίνεται καὶ τούτους κατοικεῖσθαι καὶ ἐπισυνάπτεσθαι ἑτέραις οἰκίαις, χρὴ τῶν τούτων δεσπότην ἐγγράφως ποιεῖν τοῖς παρακειμένοις, ὡς οὐ θυμιάσει ἐμπύρῳ κέχρηται ἐν τοῖς ἔχουσιν οἴκοις σχοίνους« [On rope makers and wool launderers. 21. Most people think that the crafts of rope maker and wool launderer are harmless. However, they entail both harm and danger. Firstly, they frequently smoke with sulphur, whose odour is disgusting and creates a great stench for the inhabitants. And oftentimes when smoking, the fire and sulphur unite under the ropes or wool, and from this practice the adjacent houses are continually catching fire. Experience has taught us this, for such structures have often caught fire. Therefore, they (such establishments) should be housed in isolated buildings not adjoining any other structure. In case it is necessary to operate in an inhabited building or beside an inhabited one, then the artisan has to sign a written agreement with his neighbours not to employ smoking with an open fire on premises where there are ropes].

340 Katsaros, Grammata kai pneumatikē zōē 324. – Mango, On Re-reading the Life of Saint Gregory the Décapolite 635-646. – On Byzantine writing implements based on preserved texts and illuminations, that apparently were needed for Thessalonian scriptoria as well, and partly must had been produced in the city, see Djordjević, Predstave pribora za pisanje i opremu knjige 87-112. – Sharpe, Preliminary Notes on Greek Writing Implements 151-168. – Zarras, Stadia proetoimasias 511-528, with all prior bibliography.

341 Eustathius, Opuscula, Ἐπίσκεψις βίου μοναχικοῦ ἐπὶ διορθώσει τῶν περὶ αὐτόν, 249:144, where he describes the impact that an illustrated manuscript of the Works of Saint Gregory the Theologian had on its viewers. They flocked to see it and the monks of the monastery where it was kept would explain the meaning of the illustrations to the people; even the Archbishop himself went to see and admire it, only to find out that it had already been sold.

342 Katsaros, Grammata kai pneumatikē zōē 325. – Janin, Les églises et les monastères 347-349. – Papageōrgiou, Peri cheirographou 542-543.

343 Actes d'Iviron II no. 52 ln. 321-323. »Εὑρέθη(σ)αν (καὶ) κ(α)τ(ὰ) τὴν τοποθεσίαν τοῦ Γαλυκοῦ πλη(σί)ον τοῦ Βραμοδίλ(ου) χ(ωρά)φ(ι)α [...] τῶν τοπίων [...] τῶν δεσποζομ(έν)ων νῦν παρὰ Ἰω(άνν)ου προέδρου τοῦ Μελιδόνη, ἔχοντα **σκιαγραφίαν** τοιάνδε« [And they were also found fields at the location of the Galykos near the Bramodilos (...) places (...) that now belong to *proedros*, Iōannēs Melidonēs, who is in possession of such a topographical sketch].

Late Byzantine Period

The social structure and the administrative organisation of Late Byzantine Thessaloniki is revealed through numerous extant historical sources[344]. Next to the local aristocracy and high-ranking officials who possessed large landed estates in the wider area, a strong middle class – partly comprised of foreigners – mainly occupied in trade, commerce, artisanal activities and agriculture, emerges in these texts[345]. Due to great losses of their landed possessions around the middle of the fourteenth century, much of the local aristocracy was forced to engage in commercial activity[346]. Workers, small artisans, craftsmen and small-scale cultivators constituted the great mass of the population[347]. During the second half of the thirteenth century and into the early fourteenth century, Thessaloniki prospered, thanks largely to the export trade in textiles, agricultural products, like cereals, but also wax, leather and timber from its hinterland to Italian cities, producing social changes that benefited large sections of the population[348].

By 1423, when the city came under Venetian administration, Thessaloniki's population was around 40,000 inhabitants, which was approximately half the population of Constantinople in the early Palaeologan period and almost equal to the 50,000 inhabitants of Constantinople in 1453[349]. Merchants from Thessaloniki extended their commercial activities into the Peloponnese and Crete, Constantinople, western Asia Minor, the Black Sea region, as well as Dubrovnik and Novo Brdo[350]. It appears that partnerships and the exploitation of shops and workshops were usually short-term. Profits were shared when the partnership was ended, new partners could also enter at a later time and each partner could simultaneously participate in other partnerships[351]. Fairs were very important for trade and commerce in the city and continued to be held up until the Ottoman occupation[352]. Several churches also organised festivals and trade fairs over several days, presenting another important element of the commercial life of the city[353].

The once politically and economically united Balkan area was by now long fragmented, and by the middle of the fourteenth century the productive and commercial hinterland of Thessaloniki had shrunk to the area circumscribed by the castles of Gynaikokastron, Sidērokastron and Chrysoupolis built in 1341 under Andronikos III[354]. Ottoman aggression during the late fourteenth and early fifteenth centuries cut off Thessaloniki from its hinterland, at least by land. Consequently, the countryside was inadequately cultivated and commercial connections with the hinterland were disrupted. This economic decline was only interrupted during the first decade-and-a-half of the fifteenth century, a problematic period for the Ottomans, when exports of cotton to Venice were mentioned and a renewed attempt at agriculture outside the city walls was documented[355]. Otherwise, it was often the case that the only provisions for Thessalonians were those brought in by sea. Apart from the few engaged in long-distance commerce and banking, the vast majority of the population was affected negatively by the Ottoman attacks that ruined the agricultural production of the city's hinterland and the local and regional trade and its consequent income[356].

Fortifications and Port

During the Late Byzantine period, the walls of Thessaloniki retained their original size and shape, but underwent several

344 Necipoğlu, The Aristocracy in Late Byzantine Thessalonike passim and esp. 147-151. – Eadem, Byzantium between the Ottomans and the Latins 39-115, where political history and social and economic organisation of Thessaloniki during the late fourteenth and early fifteenth centuries is thoroughly examined. – On Thessaloniki's history between 1280 and 1330, see Malamut, Cinquante ans à Thessalonique passim, and esp. 280-289 on socioeconomic conditions. – For a thorough presentation of written sources on Palaeologan Thessaloniki and an overview of the city's history, see Stavridou-Zaphraka, Physiognōmia 75-84.

345 Jacoby, Foreigners and the Urban Economy passim.

346 Oikonomidès, Hommes d'affaires 120-122.

347 Necipoğlu, The Aristocracy in Late Byzantine Thessalonike passim and esp. 147-151 on local officeholders, *archontes* and their involvement in trade and crafts. – Also, Necipoğlu, Byzantium between the Ottomans and the Latins 39-115.

348 On exports from Thessaloniki to Venice, Pisa and Florence of grains, cotton, silk, wax and kermes, see Jacoby, Foreigners and the Urban Economy 101, 105, 111, 114. – Laiou, The Agrarian Economy 326-328. – Kōnstantakopoulou, Vyzantinē Thessalonikē 218. – Necipoğlu, The Aristocracy in Late Byzantine Thessalonike passim and esp. 147-151. – Eadem, Byzantium between the Ottomans and the Latins 39-115. – Malamut, Cinquante ans à Thessalonique passim and esp. 280-289 on socioeconomic conditions. – On different types of sellers in Thessaloniki, see Matschke, Commerce 800-801. – On the size and the characteristics of the city and its population, see Bakirtzis, Urban Continuity 35-64.

349 Matschke, The Late Byzantine Urban Economy 465. – Laiou/Morrisson, The Byzantine Economy 196.

350 For an overview, see Matschke, Commerce 795-796.

351 Oikonomidès, Hommes d'affaires 78-83.

352 On fairs generally, see Vryonis, Jr., The Panegyris 196-227. – On Late Byzantine Fairs, see Matschke, Commerce 779-782.

353 Records written in a notebook of the period inform us that fifteenth-century trade fairs, other than that of Hagios Dēmētrios, were organised by the churches of Hagia Sophia, the Acheiropoiētos, the Asōmatōn and the Angelōn. Some of these lasted eight days while the Asōmatoi church organised a second, six-day long fair. See Kugeas, Notizbuch 146-148, 154. – Also see, Papagiannē, Panēgyreis 144, 145, 147.

354 Bakirtzis, Urban Continuitiy 36.

355 Necipoğlu, Byzantium between the Ottomans and the Latins 61-63.

356 Necipoğlu, Byzantium between the Ottomans and the Latins 73-76, 83.

repairs and additions. These were mainly in the acropolis and some of the towers, with the addition of new gates, just as in the Ottoman period when corner fortifications were added along the coastal stretch, and to the north of the city where the *Heptapyrgion* (*Yedi Kule*) was added as the acropolis' refuge[357]. Unlike other medieval cities, Thessaloniki was not transformed into a citadel. On the contrary, it retained the character of a city, although it remains unanswered whether it was inhabited over the entire area within the walls[358]. The acropolis at the northern end of the city is a Byzantine addition, probably built after 904, and is separated from the lower city by a curtain wall with gates[359]. It is possible that it was built on the site of an Early Christian fortification[360]. During the Late Byzantine period it was a populated part of the city with permanent residents, houses and churches. It also contained water reservoirs, military stables, an arsenal and a prison, all of which gave the area the additional character of a military camp[361]. Furthermore, it is known that military commanders and members of the royal family lived in the acropolis, at least during periods of crisis[362].

The steep and rocky north-eastern part of the city, which was probably Thessaloniki's Roman citadel known as the *Trigōnion* (Τριγώνιον), was still in use during the Late Byzantine period. However, it was sparcely populated. In one tower we find an Early Christian chapel and a small eleventh-century church with wall paintings[363].

The port continued to operate. It was defended by a wall and towers, and a breakwater protected it against bad weather and silt from nearby rivers. The main sewer might have emptied here, the so-called *Tzerempoulon* (Τζερέμπουλον)[364]. The area around the port was mainly inhabited by sailors, unsurprisingly, and it is described in the sources as an area of ill-repute, whose insubordinate and armed inhabitants participated in the Zealot insurrection[365].

Urban Planning

The Hippodameian system and the ancient setting of the city's main streets remained, at least in the lower city, more or less undisturbed and easily discernable until the twentieth century, specifically until the implementation of the fundamentally different urban plan that was conceived and gradually applied after the fire of 1917[366]. Important changes, though, had occurred earlier as well, namely, unifications of *insulae* and total negations or changes in the path of several streets, especially in the upper town and in the acropolis, where the streets were not intersected at a right angle. Generally, an organic urban fabric developed with narrow streets diverted or even sometimes cut-off completely by private buildings being built upon them[367]. Street paving in marble and stone had already been abandoned in the Middle Byzantine period and streets were surfaced with gravel or simply comprised beaten earth. Their original width was reduced significantly as buildings encroached upon pavements and even parts of the street itself[368]. Remains of ancient Roman monuments were still standing, such as the triumphal arch of Galerius to the east, the triumphal arch at the west end of the *Via Regia* inside the Chrysē Gate, and the portico with relief pillars, known as *Eidōla* (Εἴδωλα) or *Las Incantadas*, stretching south of the Agora, a few metres away from the *Via Regia*[369].

Houses and Neighbourhoods

The lower part of the city was densely populated in the Late Byzantine period, in contrast to the upper town, which no longer seems to have been used as a residential district. Members of the city's political elite, as well as members of the royal family, resided in large residences in the lower town. The exact size and characteristics of these residences have not been determined archaeologically, however, it seems probable that they were two-storied and quite similar to the houses with an inner courtyard preserved in

357 City walls delimited, protected and confined the size and shape of the city until the middle of the nineteenth century when the southern part was demolished in 1866, allowing the city to expand without constrictions at its coastal part, both to the east and the west of its historical nucleus. On the walls of Thessaloniki, see Tafrali, Topographie de Thessalonique 30-114 esp. 44-51 regarding the Late Byzantine period. – Spieser, Thessalonique 2, 5-80. – Velenēs, Ta teichē. – For a recent and full overview on this topic see Bakirtzis, Urban Continuity 39-42.

358 On this topic, see Bakirtzis, Urban Continuity 39-42, with further bibliography.

359 Velenēs, Ta teichē 133.

360 Bakirtzis, Urban Continuity 43 nt. 66.

361 Bakirtzis, Urban Continuity 43. – Kōnstantinidou, Neotera stoicheia 239-248. – Kantakouzenos III 94 (GB II, 576-580). – Choumnos, Thessalonikeusi symvouleutikos 139.

362 Bakirtzis, Urban Continuity 46-47, with further bibliography.

363 Velenēs, Ta teichē 62-63. – Bakirtzis, Urban Continuity 47, with all new archaeological finds from the area.

364 For the preservation of the *Tzerempoulon* in the fifteenth century, see Anagnostes, De extremo p. 508 (4) §347.13 and Anagnostes, Diēgēsis 38, §13.30: »Τοῦτο καὶ κατὰ τὸν πύργον τὸν καλούμενον Σαμαρείαν […] εἰς τοῦτον συνέφυγον μόνον καὶ τοὺς ἄλλους εὐθὺς κεκωλύκεσαν τῆς εἰσόδου. Οἳ καὶ διὰ τοῦ κατὰ θάλατταν προβεβλημένου διατειχίσματος (Τζερέμπουλον τοῦτο καλεῖν πάντες εἰώθαμεν) εἰς τὰς τριήρεις εἰσίασι« [And these things (happened) at the so-called tower of Samareia (…) they had taken refuge only there, and immediately barred entrance to anyone else. They (the Latin rulers and some from Zeta), passing through the breakwater on the seaward side that we used to call the *Tzerempoulon*, boarded triremes].

365 Kantakouzenos III 94 (CB II, 575.7-13): »τὴν πρὸς θάλασσαν πύλην […] περὶ ἣν οἰκοῦσι πάν τὸ ναυτικόν, οἱ πλεῖστοί τε ὄντες καὶ πρὸς φόνους εὐχερεῖς, ἄλλως τε καὶ ὡπλισμένοι πάντες, ὥσπερ τὸ κράτιστόν εἰσι τοῦ δήμου, καὶ σχεδὸν ἐν ταῖς στάσεσι πάσαις αὐτοὶ τοῦ παντὸς πλήθους ἐξηγοῦνται προθύμως ἑπομένου, ᾗ ἂν ἄγωσιν αὐτοὶ ἔχουσι δὲ καὶ ἰδιάζουσαν ἀρχὴν αὐτοὶ παρὰ τὴν τῆς ἄλλης πόλεως« [the sea gate (…) around it live all the sailors, most of them capable of murder and all of them armed, since they are the most powerful part of the city. If they walk first, they lead the entire crowd which follows them readily in almost all riots. They have a peculiar authority over the rest of the city].

366 Vickers, Hellenistic Thessaloniki 156 and fig. 3. – Vitti, Poleodomikē exelixē 67-86, and Karydas, Topographikes paratērēseis 447-450.

367 Bakirtzis, Urban Continuity 42, 55.

368 Bakirtzis, Urban Continuity 42-43, with references to the changes that the *decumanus* coinciding with the modern Agiou Dēmētriou Street underwent and on several *cardines* that intersected it, remaining practically unchanged from Antiquity into modern times. Also, the same phenomenon appears with great clarity in the salvage excavations at the metro stations of Venizelou and Agias Sophias Streets, revealing the *Decumanus Maximus* (modern Egnatia Street), see Makropoulou/Kōnstantinidou, METRO Thessalonikēs – Stathmos Venizelou.

369 Spieser, Thessalonique 55-56, 62, 86-87. – Vitti, Poleodomikē exelixē 57, 198-199 and 224-226.

the lower eastern part of the city until the early twentieth century[370]. The bishop's palace stood to the north of the Metropolis (Hagia Sophia), comprising a two-story complex of buildings with a large *triclinium* and an open gallery, smaller churches and gardens[371]. Ruins of large residences and other late-antique buildings were used and incorporated into smaller houses of the tenth to fourteenth centuries. These houses were often of only a single room and usually shared a common courtyard[372]. The rectangular *insulae* of the ancient city's grid were replaced by neighbourhoods of such courtyards surrounded by houses, which could also incorporate small churches and markets, with narrow, curved and occasionally maze-like passages, shaping the character of medieval Thessaloniki[373].

At this stage, the Ancient Agora appears to have still been an open area. Possibly the public square (δημόσια ἀγορὰ) mentioned in the sources was partly occupied by tombs and workshops, but not houses[374]. In contrast, the Hippodrome was occupied by housing developments and a cemetery[375]. On the site of the Palace of Galerius, the octagonal throne room was transformed into a water cistern. Also on the site of the palace or close to it, there appears to have been a pottery, judging from the large quantities of glazed pottery found here during excavations[376]. Of the baths formerly operating in the city, only one in the lower part of the upper town was preserved[377].

Churches

Four important ancient churches, surrounded by cemeteries, were still functioning in Late Byzantine Thessaloniki. Found mainly in the lower part of the city, these were: the Rotonda, which had, in all likelihood, acquired its final form in the Middle Byzantine period[378]; and the Hagios Dēmētrios Basilica, which was then newly wall-painted and was supplemented by the Middle Byzantine chapel of Hagios Euthymios, the crypt, and the ninth-century north chapel of Hagios Iōannēs Prodromos[379]. In addition, the Acheiropoiētos Basilica had its walls painted in the early thirteenth century[380] and the metropolitan church of Hagia Sophia was still in use[381]. The single other Early Christian building that remained in use was the Katholicon of the Latomou Monastery in the upper city, which had its walls painted in the twelfth century and again around 1300. Finally, Middle Byzantine churches were still operating in the lower town which were renovated in the Late Byzantine era, such as the Panagia Chalkeōn and the Katholikon of the Monastery of Hagia Theodōra[382].

Monasteries

Some fifty-six new churches, of which at least twenty-two were *katholika* of monasteries, were constructed during the Palaeologan period in Thessaloniki[383]. Among the examples surviving today, only two, Hagios Panteleēmōn and the sepulchral chapel of Sōtēras, were built in the densely populated eastern lower city. All the others were dispersed throughout the upper city and around the fringes of the lower city where apparently more open areas were found[384]. Neighbourhoods formed around each monastery or small parochial church, often taking the name of the monastery of the church. These neighbourhoods comprised the monastery's property which usually had several auxiliary buildings and houses that were rented out or occupied by monastery servants[385]. In legal

370 Rautman, Observations on the Byzantine Palaces of Thessaloniki 300-306, on the palaces from the time of Galerius to the Ottoman period, which are known mainly from the written sources. – In general clues about the buildings of Thessaloniki are found in the legal documents of the monasteries of Mount Athos, where one and two-storey houses are mentioned, having saddle roofs, or lean-to roofs with porches or porticoes. For instance, see the description of the property of Theodōros Karabas in Actes de Chilandar I no. 59.

371 Rautman, Observations on the Byzantine Palaces of Thessaloniki 299. – Markē, Agia Sophia kai prosktismata 54-61. – Bakirtzis, Urban Continuity 52, with thorough bibliography.

372 Bakirtzis, Urban Continuity 55, presents two cases of *insulae* where Roman and Early Christian ruins were incorporated into small Late Byzantine houses which were built on the same site, at the *insula* east of the Agora on the *Via Regia*/*Leōphoros*, and further to the NW, at the *insula* on nowadays Dioikētēriou Square. Small private houses in Late Byzantine Thessaloniki are described in Athonite deeds of transfer: Papachryssanthou, Maisons modestes 254-267, and Živojinović, The Houses 464-474. See also Giros, Présence athonite à Thessalonique 265-278. – For the Byzantine houses, see Ćurčić, Houses in the Byzantine World 234-248.

373 Theocharidēs, Istoria Makedonias 14. – Bakirtzis, Urban Continuity 56. – On the same phenomenon in later Ottoman periods see Dēmētriadēs, Topographia Thessalonikēs 23-46.

374 Kantakouzenos III 64 (CB II, 393), III 93 (CB II, 571). – Bakirtzis, Urban Continuity 57.

375 Vitti, Poleodomikē exelixē 216-218. – Bakirtzis, Imports, Exports and Autarchy 111. – On this type of market, see also Laiou/Morrisson, The Byzantine Economy 37. – Hattersley-Smith, Byzantine Public Architecture 188-189. – Theodorus Studita, Epistulae §15.106-118 (epistula 3): »προσέμενεν ἐν τῇ ἀνατολικῇ πόρτῃ [...] καὶ μετὰ τὸ εἰσελθεῖν κλείσαντες τὰς πύλας ἦγον διὰ τῆς ἀγορᾶς« [waited at the eastern gate and after entering they closed the gates and passed through the marketplace]. – See Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 6-7. – On the fact that in Constantinople there existed peripheral animal or food markets as opposed to central luxury markets in the Forum of Constantine and in *stoai*, see Mundell Mango, The Commercial Map of Constantinople 204-205.

376 Personal observation of the unpublished finds once kept in the Archaeological Museum of Thessaloniki. – Also mentioned in Bakirtzis, Urban Continuity 58.

377 Trypsianē-Omērou, Vyzantino loutro 587-599. – Trypsiani-Omirou, Byzantine Bath, Thessaloniki 314-317. – On an Early Christian bath connected to the Acheiropoiētos Basilica, see **cat. no. 86**.

378 Bakirtzis, Urban Continuity 48. – Moutsopoulos, Palaiochristianikē phasē Rotondas 366 and 369. – Theocharidou, Rotonta Thessalonikēs 67 and 75. – Also, movable finds from the Late Byzantine and Post-Byzantine cemetery (pottery, glass vessels and jewelery) are kept in the Museum of Byzantine Culture.

379 Gouma-Peterson, The Parecclesion 168-182. – Gouma-Peterson, The Frescoes 111-129. – Tsigaridas, Toichographies Agiou Euthymiou passim. – Moutsopoulos, To parekklēsi 303-330.

380 Xyngopoulos, Toichographiai 6-30. – Kissas, Umetnost u Solunu 39.

381 Tampakē, Thessaloniki 114-133 esp. 127-128, with exhaustive bibliography. – Bakirtzis, Urban Continuity 51-52, with more recent bibliography.

382 On Panagia Chalkeōn see, Tsitouridou, La peinture monumentale 18. – Bakirtzis, Urban Continuity 53, with older bibliography. – On Hagia Theodōra, see Bakirtzēs, Monē Agias Theodōras 587-588. – Cat. Thessaloniki 2001, 8. – Bakirtzis, Urban Continuity 53-54.

383 Vokotopoulos, Church Architecture 107-116. – Rautman, Ignatius of Smolensk 143-169 esp. 162-169. – Rautman, Aspects of Monastic Patronage in Macedonia 62-69, especially on the fact that the patrons of the Palaeologan monasteries of Thessaloniki are mainly members of the city's clergy and that they were not endowments of the province's landed aristocracy, and on p. 72-73 on the role that this fact played in their ground plan, which affected the basic form of the city's metropolitan church, Hagia Sophia. – For some interesting results derived from the quantitative study of R. Janin's *La Géographie Ecclésiastique de l'Empire Byzantin*, see Varinlioğlu, Urban Monasteries passim and esp. 190-192, 197 on Thessaloniki.

384 Those preserved today are Hagios Nikolaos Orphanos, Taxiarches, Hagia Aikaterinē, Hagioi Apostoloi, Vlatadōn, and Prophētēs Elias. On the matter see nt. 206-215.

385 Theocharides, Istoria Makedonias 14. – Bakirtzis, Urban Continuity 55-56, with further bibliography.

documents of the monasteries of Mount Athos the names of nine neighbourhoods are known: Hagios Mēnas, Kataphygē, Acheiropoiētos, Hagia Pelagia, Hagios Paramonos, Asōmatoi, Omphalos, Chrysē and Hippodromos[386].

The fact that the monasteries were built in the upper town, close to the city walls, indicates that, while the outer edges of the city following the city walls remained the same from Antiquity, the populated area within the walls had diminished. This was already apparent in the Middle Byzantine period and persisted or even intensified into the Late Byzantine period. Activities that had previously taken place outside the city walls, such as the operation of monasteries, artisanal activities and even small-scale agriculture and husbandry were now brought within the city[387].

Cemeteries

From the seventh century onwards and throughout the Byzantine and Ottoman periods, the ancient necropolises outside the city walls ceased to be used and burials started to take place within the city itself. Small Late Byzantine cemeteries connected with chapels and small monasteries dispersed throughout the city are often found in the excavations. Due to the fragmentary character of the excavations, small groups of graves are also found without archaeological evidence of a chapel[388].

Workshops

A considerable number of sites where artisanal activities have been identified have been discovered in excavations both inside and outside of the city walls. Outside the city walls, artisanal activities have been found following the streams to the north-west and north-east of the city. Here we find clusters of water mills for grinding cereals and at least one oil press, which may have been operating since Early Christian and Middle Byzantine times. Similar activities also took place within the city: to the north, where the steep gradient of the land and the presence of monasteries (which were economic units as well) were favourable to such activities; and also, according to the written sources, close to the port. A lime kiln using the shells of edible shellfish as raw material has been identified in a densely populated part of the city, near the Metropolis and next to the large Monastery of Hagia Theodōra. Potteries have been discovered in a number of locations: in the centre of the city, at the plaza in the area of the Agora; further to the south on the *Via Regia*/*Leōphoros*; next to the Monastery of Hagia Theodōra; in the port area; close to and along the eastern and western city walls; as well as in the sparsely populated mountainous area of the city. Many workshops operated outside the western walls, stretching far from them, roughly along the path of the road that led to the central western city gate. Potteries have also been discovered outside the eastern city walls, at least at the coastal part of the plateau. Finally, tanneries and dyeworks, apparently in disregard of the acute annoyance caused to their neighbours, operated in densely populated parts of the city, such as in the eastern part close to the *Leōphoros* and near the western city walls.

More specifically and in detail, the artisanal activity in the Palaeologan period that has been identified in excavations or through the written sources can be presented as follows:

Water Mills: Flour, Oil and Wine

Water mills for grinding cereals, or more rarely for oil-pressing[389], represented an important economic activity (**fig. 38**), and apart from those mentioned in the written sources[390], more than twenty of them have been physically located, mainly outside the city walls. These are twelve mills, dating from the Byzantine or even Early Christian periods, which were rebuilt in the fourteenth century, located in north-east in the vicinity of the Panorama. In addition, eight mills and a wine press have been located to the north-west, along a stream in the vicinity of Retziki, of which at least four can

386 The names of the neighbourhoods are noted, among others, in the following legal deeds of athonite monasteries: Hagios Mēnas: Actes de Chilandar I no. 30:17. – Kataphygē: Actes de Lavra I no. 59:6. – Actes de Docheiariou no. 3:57 no. 4:78, 79. – Acheiropoiētos: Actes d'Iviron III no. 73:14, no. 78:4. – Hagia Pelagia: Actes de Vatopaidi I p. 33 nt. 305. – Actes de Zographou no. 8:7. – Hagios Paramonos: Actes d'Iviron III no. 60:9, 76:58. – Actes de Chilandar I no. 25:3. – Asōmatōn: Actes de Lavra I no. 59:4. – Actes d'Iviron IV no. 91:26, 92:20. – Omphalos: Actes de Docheiariou no. 4:80, no. 49:261. – Chrysē: Actes de Docheiariou no. 4:80. – Hippodromion: Actes d'Iviron II no. 52:370. – Actes d'Iviron III no. 78. – On the neighbourhoods of Thessaloniki during the fifteenth century and throughout the Ottoman period, see Dēmētriadēs, Topographia Thessalonikēs 23-46.

387 Bakirtzis, Urban Continuity 62-63.

388 Markē, Christianika koimētēria stēn Ellada 172-175. – Makropoulou/Tzitzimpasi, Sōstikē anaskaphē 364-366. – Kanonidēs, Neōtera stoicheia apo tis anaskaphes tou 1998, 183-194 esp. 184 fig. 1 and 185 fig. 2. – Makropoulou, Byzantino koimētērio 235-244. – Bakirtzis, Urban Continuity 63. – Kanonidēs, Vyzantino koimētērio plateias Dioikētēriou 523-530. – Kanonidēs, Taphes entos tōn teichōn tēs Thessalonikēs 207-218.

389 For a general overview of oil and wine production in the Mediterranean, see Amouretti/Brun, La production passim. For a note on mills in Middle and Late Byzantine era see Laiou/Morrisson, The Byzantine Economy 99-100, with bibliography. – Also see Laiou, Economic History, vol. 1, 110-112, 235-236, 280, 359-360, 381-382. – For a water-driven olive oil mill from 1324/5 excavated on the north shore of Volvē lake in Thessaloniki's hinterland, see Papangelos, Elaia kai Elaion 187 figs 7-9. – Siaxambani, Watermills from Polichni 340 figs 2-5. – For the fact that it belonged to the Thessalonian Monastery of Vlatadōn until 1575, see Vasdravelēs, Istorika archeia 17-18 no. 20. – For a short overview of all prior publications on the subject, see Sampanopoulou, Katalogos 54-55. – For an overview of Late Roman and Byzantine oil presses in Greece, see Raptēs, Ergastēria 122-132, 285-301.

390 e. g. Emperor Ioannes Komnenos (1118-1143) donated the rights on the water coming from Chortiatēs with its water pipe and the mills operating in Thessaloniki to the monastery of Christos Saviour Pantokratōr, which he had founded in Constantinople, in 1136, see Gautier, Le typikon du Christ Sauveur Pantocrator 120-121, ln. 1534-1535: »τὸ δίκαιον τοῦ ἀπὸ τοῦ Χορταΐτου καταῤῥέοντος ὕδατος σὺν τῷ ἀγωγῷ καὶ τοῖς ἐν Θεσσαλονίκῃ ἐνεργούσι μύλωσι« [the rights to the water flowing down from Chortaites, (together) with its water pipe and the mills operating in Thessaloniki].

be dated to the Late Byzantine period[391]. All of them were built on steep sites with vertical slopes and took water from two different sources. Furthermore, a water tower has been excavated in the upper part of Thessaloniki, indicating that workshops using water power, possibly water mills, were active within the city walls as well[392]. It should also be noted that relatively few hand-mills have been unearthed within the city, implying that the flour used by its inhabitants was mainly ground by bakers in their own mills, or in other large professional mills[393]. Bakers were protected by the state and there was a provision that exempted them and their animals from public service in order to be able to grind grain for their produce and prevent any hindrance to the baking of bread[394]. Theoretically, bakeries should be easily identifiable due to their kilns and mills, as was the case with the architectural remains of Roman bakeries[395], yet for the time being it has not been possible to locate such structures in the city, although it is known from legal texts that such businesses operated in Late Byzantine Thessaloniki[396]. An active bakery, *mangipeion* (μαγκιπεῖον), is mentioned among the buildings owned by Chortaïtou Monastery around 1320 in the quarter of Hagios Paramonos[397]. It is also known that they should not have been located under or close to dwellings for fear of fire[398]. The law had a provision especially for Thessaloniki where, due to the reverse winds, i. e. the summer wind blows from the south and the winter wind blows from the north, arrangements for the firebreak between neighbours were also reversed[399].

A linseed oil mill, a *tzymilareion* (λινελαιοτριβικὸν ἐργαστήριον or τζυμιλαρεῖον), is mentioned in 1432 as being in the centre of the city in the Hagios Mēnas' neighbourhood[400]. This was in a document outlining the rental agreement between Kōnstantinos Manklavitēs and the owners, the Nea Monē, replacing that made with an earlier and anonymous Turk, but under the same terms of eight golden coins and a jar, *laginion* (λαγίνιον), of linseed oil per year.



Fig. 38 Water mill, Polichnē, Thessaloniki, Late Byzantine period.

The existence of linseed oil presses in the city can be assumed from a comment made by Archbishop Symeon that during the famine caused by the last siege of the city the inhabitants mixed »bran made from crushed linseed […] with a little barley or sometimes wheat flour«[401]. Although written sources do not offer direct references on the production of olive oil in the city, at least two oil presses (marble closure slabs, *thorakion,* in second use) are preserved in the Vlatadōn Monastery, which must had been used in the on-site crushing of olive kernels, or some other kind of seeds for the production of oil. Two huge marble jars of unknown date preserved

391 On water mills in general, see Forbes, Power 589-628. – On mills in Byzantium, see Bryer, The Means of Agricultural Production 110-112, and Bouras, Aspects of the Byzantine City 519, both with further bibliography. – For an overview of Late Roman and Byzantine water mills excavated in Greece, see Raptēs, Ergastēria 94-103, 235-260, where the technology that their operation involves is also given. – Also Raptis, Water as Power 109-118. – For a water mill in the village Hagioi Apostoloi, Chalkidiki, possession of the metropolis of Thessaloniki leased in late thirteenth century to the priest and miller Dēmētrios Kontos, see Katsaros, Engrapha schetika me mētropolē Thessalonikēs. – On mills in Thessaloniki's region, see Siaxampanē, Vyzantina ichnē 86. – Siaxampanē, Neromyloi 112-122. – Siaxambani, Watermills from Polichni 338-341 (**cat. nos 69, 70, 74**).

392 8 Vlachava Street: Markē, Anaskaphōn eranismata 248-250 (**cat. no. 71**).

393 Parts of at least two large grinding mills are housed in the Archaeological Museum of Ancient (Roman) Forum, Thessaloniki, apparently found during the excavation of the site. The number of fragments of grinding stones found in the excavations should not exceed a few dozens, although one should keep in mind that due to their material and condition probably they had not always been collected and registered. – On references to mills and millers in Byzantine texts, see Koukoules, Vios kai politismos, B1, 204-205, where apart from wind and water mills references to animal-driven mills are also given.

394 Book of Eparch 53-55 chap. 18 is devoted to bakers and esp. §2. – Book of Eparch, Koder 128-130.

395 Adam, Roman Building 322-324.

396 On bakers in Byzantium, see Koukoules, Vios kai politismos, B1, 182-184, and Laiou, Baker 246, with references to the sources. – A useful collection of papers on wheat and bread in Antiquity and Byzantium have been published in the proceedings of the conference Ὁ ἄρτος ἡμῶν' από το σιτάρι στο ψωμί, organised by the Politistiko Technologiko Idryma of ETBA in 1994 in Athens.

397 Actes d'Iviron III 236-240, no. 76.

398 Book of Eparch 18.3 §.3. – Armenopoulos, Procheiron Nomōn 2.4.14. – Book of Eparch, Koder 130.

399 Armenopoulos, Procheiron Nomōn 2.4.14: »ἐν δὲ τῇ Θεσσαλονίκῃ ἐπειδή τἀναντία συμβαίνει, τὸν μὲν νότον θερινὸν ἄνεμον εἶναι, τὸν δὲ βοῤῥᾶν χειμερινὸν, εἰ καὶ τἀναντία τούτοις ἐν ταύτῃ δοίημεν, ἤγουν τῷ μὲν νοτιωτέρῳ περισσοτέραν ἀπὸ τοῦ γείτονος τὴν ἀπόστασιν, τῷ δὲ βορειοτέρῳ ὀλιγωτέραν, τάχ'ἂν οὐκ ἀπεικότως ποιοῖμεν« [And in Thessaloniki, because the opposite (phenomena) occur, i. e. the south wind blows in the summer, and the north wind in the winter, and if we assigned it the opposite of these, namely a greater distance from one's neighbour to the south, and a lesser one to the north, we would not be in error].

400 Papangelos, Elaia kai Elaion 174-201 esp. 187 nt. 83. – Actes de Lavra III 183-185 no. 168.

401 Balfour, Politico-Historical Works of Symeon 64 (Λόγος εἰς τὸν ἐν ἁγίοις μέγιστον ἀθλητὴν καὶ μυροβλύτην Δημήτριον ἐν ἱστορίας τύπῳ τὰ νεωστί αὐτοῦ γεγονότα διηγούμενος θαύματα, f. 290v, 3-5), 180. – Jacoby, Foreigners and the Urban Economy 123.

in front of the monastery's refectory were presumably connected with the same activity[402].

In 1419, Hodēgētrianos and Dēmētrios, sons of Dadas, rented (and had done so since sometime before 1415) from the Monastery of Xenophontos five adjacent grocery stores and three large houses in the Asōmatoi quarter at the eastern part of the city that their deceased father had previously turned into a large and thriving wine shop, οἰνοπωλεῖον[403]. Furthermore, several small-sized reservoirs mentioned in excavation reports can be connected with the presses (wine vats) and their reservoirs (ληνοὶ, ὑπολήνια ληνοϋπολήνια and πατητήρια) used apparently for the production of wine that are known to have existed in small and apparently humble properties from several legal documents of this period. A Byzantine wine press has also been discovered within a tower of the eastern city walls at Kastrōn Street north of Olympiados Street[404]. It is quite evident that the owners of large parcels of land in the countryside possessed mills and presses for both olive oil and wine[405]. There is an early note, dated to 1104, of a roofed press (ληνὸς κτιστὸς καταχυτὸς μονόρρυτος ὑποκέραμος) in Thessaloniki, belonging to the Ivērōn Monastery. It was situated in a court with gates near the dependency of Leontia and it is also noted that an oblong house near the press was used as a mill[406]. Two more presses and accompanying vats (ληνοὶ μετὰ τῶν πατητηρίων) in the Monastery of Hagia Varvara, in the quarter of the Hippodromion at the eastern end of Thessaloniki, are stated to exist in the same document[407].

Several presses are mentioned in the deeds of sale for houses in Thessaloniki. They appear in small, urban plots, e.g. six presses – πατητήρι, ληνὸς (press) and ληνοϋπολήνιον (a term expressing both the press and its deposit or vat) – are described in three different properties or plots[408]. In June 1314, three houses with three presses (πατητήρια) situated in the quarter of Acheiropoiētos were bought by the Ivērōn Monastery from Kōnstantinos Marmaras[409]. Around 1320, the monks of Chortaïtou Monastery exchanged a court with its buildings for three other courts with their buildings in the quarter of Hagios Paramonos, which included an active bakery (μαγκιπεῖον) and two presses (ληνούς)[410]. In March 1326, the Monastery of Ivērōn bought four houses in the quarter of the Hippodromion, having one press and its reservoir (ληνοϋπολήνιον), a garden and a plot where a house could be built, sharing with other houses of the same court the entrance to the court, a well, and a water channel[411]. One of the witnesses to the transaction was Geōrgios Marmaras *Prōtomaïstōr tōn Oikodomōn* (Πρωτομαΐστωρ τῶν Οἰκοδόμων), master of the builders, known also from other documents between 1322 and 1327, offering evidence for the marbleworking profession and the existence of a corporation or possibly a guild of builders in the city[412].

Lime Production

Production of lime within the city walls was forbidden from at least the Early Byzantine period and it was clearly stated in a Late Byzantine legal text, the *Exavivlos* written by Konstantinos Armenopoulos in Thessaloniki. It is stated there that a lime kiln should be a hundred cubits away from housing and fifty cubits from threshing floors[413].

In spite of this, an interesting and still not thoroughly studied archaeological discovery from 2010 may possibly indicate lime production in the centre of Late Byzantine Thessaloniki[414]. The find consists of a circular and strongly built well (c. 1 m wide) in which fragments of glazed pottery bowls and pottery stilts were found, as well as detritus from nearby activities, which had been dumped there after the well ceased to function. These finds date the period of the filling of the well to the Late Byzantine period. Lower in the well, a thick layer of different species of shells has been found. Mainly oysters, some cockles and a few pectens, these had been subjected to intensive firing that resulted in their calcination[415]. According to the excavator, the wider area was found covered with a layer of shells, while two rectangular lime tanks, built with bricks and retaining a thick layer of lime on their walls, were discovered nearby.

Shell exploitation for lime production was known in the Mediterranean region in the Bronze Age and Late Roman period, and this technique still survives in traditional workshops

402 Bakirtzēs, Tsoukalolagēna 114-115.
403 Actes de Xenophon 217-221 no. 32. – Necipoğlu, Byzantium between the Ottomans and the Latins 62-63. – On references to wine shops and taverns in Byzantine texts, see Koukoules, Vios kai politismos B1, 193-195, and also Kazhdan, Wine Merchant 2199-2200.
404 Cat. Thessaloniki 2003a, 5 (**cat. no. 75**).
405 Laiou, The Argrarian Economy 350-352.
406 Actes d' Iviron II no. 52 ln. 343-344.
407 Actes d'Iviron II no. 52 ln. 380.
408 Actes d'Iviron III 18-19 nos 73, 76, 84.
409 Actes d'Iviron III 187-189 no. 73 ln. 16
410 Actes d'Iviron III 236-240 no. 76 ln. 62.
411 Actes d'Iviron III 297-301 no. 84 ln. 20-30.
412 Actes de Chilandar nos 84, 85. – Actes de Zographou no. 25. – On different types of »modest« houses in Thessaloniki appearing in fourteenth-century legal texts and similar to the ones noted in the aforementioned contracts, see Papachrysanthou, Maisons modestes 254-267. – And Živojinović, The Houses 464-474.
413 Armenopoulos, Procheiron Nomōn 2.4.17: »Περί φούρνου τῆς ἀσβέστου. Τὸν ἐθέλοντα φοῦρνον τῆς ἀσβέστου κατασκευάζειν χρὴ ἀφίστασθαι πάσης οἰκήσεως δευτέρας ἢ τρίτης θέσεως ἢ καὶ τῶν ἐφεξῆς περαιτέρω καὶ λοιπῶν, πήχεις ἑκατὸν ἀπὸ παντὸς κλίματος ἀνέμου· δριμυτέρα γὰρ καὶ λοιμώδης σφόδρα ἡ ἀπὸ αὐτῆς ἀτμίς· ἄλωνος δὲ ἀφίστασθαι ταύτην τὴν κάμινον πήχεις ν« [Whoever wishes to construct a lime kiln must be situated far from every residence in the second and third zone, or sites even further out than these, a hundred cubits (c. 75 m) from every downwind, because the vapour from the kiln is acrid and highly noxious. Also, the kiln must be situated at a distance of 50 cubits from any threshing floor].
414 Vasileōs Ērakleiou 45 (**cat. no. 4**). I thank the excavator of the site, Dr S. Akrivopoulou, for giving me the chance to see and examine this still unpublished find.
415 I wish to thank Dr R. Veropoulidou, archaeologist-archaeomalacologist, for her help in understanding this procedure. – On the consumption of shells in Byzantine society mentioned in Byzantine sources, see Koukoules, Vios kai politismos, E, 88, and on fishing techniques, ibid., E, 338-339.



Fig. 39 Wasters of sgraffito clay wares, Thessaloniki, Palaeologan period.

in sub-Saharan Africa and until recently in India as well[416]. Furthermore, although no information on the matter is found in Byzantine written sources, a relevant Middle Byzantine archaeological find from Butrint, Albania, indicates the continuation of this production process in Byzantium[417]. This procedure involves the recycling of refuse, food remains, or – in other cases like that of murex shells – the residue from other artisanal production. Thus the huge concentrations of shells that were necessary for the production of purple dye and the voluminous quantities of shells consumed as food were conveniently exploited and converted into the ever-needed lime.

Ceramic Production

Pottery production flourished during the Late Byzantine period. At the same time, the use of ceramic amphorae diminished and gradually disappeared as wooden barrels replaced their role in the transportation and storage of oil and wine[418].

Glazed vessels are characteristic of this period and thanks to unfinished, deformed vessels found in the city, local products can be easily discerned[419] (**fig. 39**). Almost all the findings are open bowls with only a few jugs. The hitherto known products are distinguished according to their decoration in two categories:

1) Engraved. (**figs 40. 42**) These are the majority of objects, usually decorated with birds, often pecking a lanceolate leave[420], spirals, concentric circles delimited with wavy lines, rosettes and checkerboards, occasionally with a spiral in each field, medallions, net-like bands, and monograms of Saint Dēmētrios.

2) Painted. The local production of painted objects seems to be proven by bowls showing an impressed monogram of Saint Dēmētrios on the bottom, which were sometimes painted with exterior motifs. Such vessels were used to collect the watery Palaeologan myrrh from the church of Hagios Dēmētrios (**fig. 41**).

The products of the workshops of Thessaloniki must have been appreciated sufficiently, and/or the trade in goods taking place in its port have been such, that gave rise to such a utilitarian product, like pottery bowls being found in the excavations of foreign ports, such as those of Constantinople, Varna and Venice[421]. Yet, the small number of these finds makes it more probable that they were the personal belong-

416 Brysbaert, Murex Uses in Plaster Features 2, on murex-shell lime plaster production and use in the Aegean and eastern Mediterranean Bronze Age, with further bibliography. – Ballester et al., Use of Limestone 559, 564, where the improved quality of limestone obtained from mussels is discussed. – Carannante, Purple-dye Industry Shell Waste Recycling 8, 16, where the possibility of purple dye industry shell waste recycling in Minoan Crete is discussed. – Finally for an overview of the use of murex shells and their different types of use, one of which might have been the production of lime, since these finds from mid to late third-century Berenike were associated with ovens and kilns, see Reese, Industrial Exploitation of Murex Shells passim esp. 89-92.

417 Unpublished find, Veropoulidou, Food Consumption. I thank Dr R. Veropoulidou for letting me know about this find before the final publication of her paper on the subject.

418 On Byzantine amphorae, see Bakirtzēs, Tsoukalolagēna 70-88, especially on the timing and reasons for their redundancy, 84-87.

419 For an overview of Late Byzantine glazed pottery and issues of their trade and market see Papanikola-Bakirtzi, Ceramics on the Market 205-216.

420 Papanikola-Bakirtzē, Ergastērio 377-388.

421 Papanikola-Bakirtzis, Palaeologan Glazed Pottery 203-204.





Fig. 41 Glazed clay bowl with painted and impressed decoration, Palaeologan period.

Fig. 40 Glazed clay bowl with incised decoration, Palaeologan period.

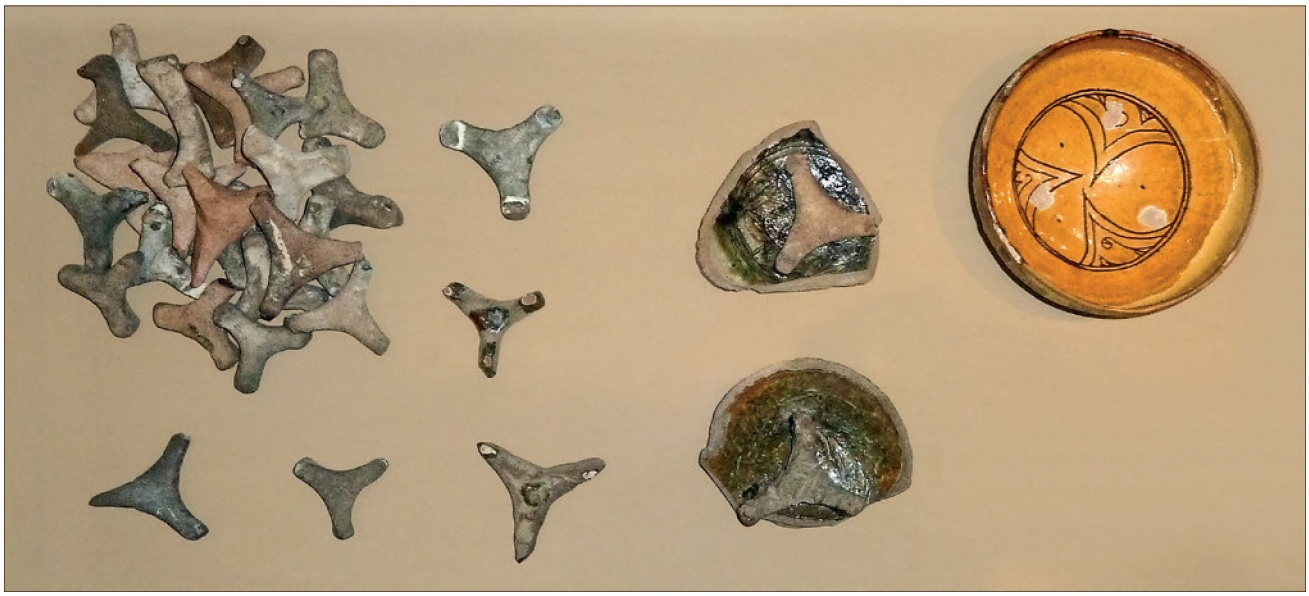


Fig. 42 Pottery wasters and stilts, Palaeologan period.

ings of travellers and merchants, and not part of the normal commercial cargo that they were trading. This production flourished from the second half of the thirteenth century into the fourteenth century[422].

Another form of pottery product that was also possibly produced locally is the glazed tile. We find examples preserved on the façade of Hagia Aikaterinē in the form of glazed plaques bearing inscribed rosettes, occasionally inscribing a cross, and/or being flanked by crosses, trees and birds[423].

According to the archaeological evidence, potteries, ranging from entire installations with kilns preserved on site to a few pottery stilts found in a pit[424] (**fig. 42**), have been located in open spaces at the centre of the city and close to

422 For a detailed overview of the Thessalonian Palaeologan glazed pottery, see Papanikola-Bakirtzē, Ergastērio 377-388. – Papanikola-Bakirtzi, Palaeologan Glazed Pottery 203 fig. 2. – Cat. Athens 1999, 188-221 esp. 188-189. – Papanikola-Bakirtzē, »Polytima« 451-467.

423 Cheimōnopoulou, Pēlines Ephyalōmenes plakes 24-29. – Fourteen plaques/tiles, all of them with identical dimensions (30 cm × 40 cm × 4 cm) are decorating the façade of the late thirteenth to mid-fourteenth-century church. The rosettes that appear on them are also known from Thessalonian glazed bowls and also appear on Palaeologan coins mint in Thessaloniki, indicating so a local origin for the plaques/tiles as well. – For the history of the church and its connections with thirteenth-century architecture of Epirus where similar ceramic decoration occurs (otherwise unknown in Thessaloniki), see Ćurčić, Architecture in the Balkans 550-552.

424 Pottery stilts are little tripods, free-hand shaped, with a pointed foot at the end of each leg on one of the flat sides. They were used as spacers for firing glazed bowls, i.e. they were placed between the bowls, while they were piled in order to be fired in the kiln. It appears that they were invented in the Far East at least at the beginning of our era. They appeared in the Near East in the ninth century and were introduced to the Byzantine world at the end of the twelfth century. – See Papanikola-Bakirtzē, Tripodiskoi 641-648. – Stern, Evidence of Early Islamic Pottery 23-25.



Fig. 43 Pottery wasters and stilts, Post-Byzantine period.

the western and eastern city walls[425]. According to the law, pottery kilns had to be built either twenty or twelve cubits from the nearest house or threshing floor, depending on the orientation and the winds blowing from that side, or seven and four cubits if the neighbouring house did not have an opening towards the site of the kiln, although from the archaeological record it is doubtful if anyone fully complied with these rules[426]. It appears that in the Ottoman period the same sites continued to be used by potters, and scarce movable finds dated to this period, such as unfinished vessels and pottery stilts, have been found in the courtyard of the Rotonda at 2 Kamvouniōn Street, at the northern end of the Roman Hippodrome and around the Acheiropoiētos Basilica (**fig. 43**)[427].

425 Ancient Agora: personal observation and research of unpublished glazed ceramic material from the excavation. Three unfinished bowls found in the Agora were presented in the exhibition Pracht und Alltag: see Cat. Bonn 2010, 344, nos 488-489 (D. Papanikola-Bakrtzi). – A general note is also given in Adam-Velenē, Archaia Agora 517-521 esp. 519 (**cat. no. 26**). – On the site of Galerius' Palace: personal observation and research of ceramic material, e. g. stilts, from unpublished excavation campaigns from the 1960s and 1970s kept in the depots of the 16th Ephorate of Prehistoric and Classical Antiquities (**cat. no. 27**). – Finds from the plot of the former Third Male Gymnasium: Cat. Thessaloniki 2002, 10 (**cat. no. 34**). – On the site of an Early Christian pottery at 30A K. Melenikou Street a Late Byzantine pottery was established, where two small, two-storied kilns and unfinished bowls with inscribed bird pecking a tree have been found: Cat. Thessaloniki 2005, 6 (**cat. no. 33**). – D. Gounarē and Vasou Streets, currently 47 D. Gounarē Street: Souereph, Gounarē-Vassou, 350-351 (**cat. no. 35**). – 1 Ippodromiou and Manousogiannakē Street: Alexandrē, Ippodromiou 1 kai Manousogiannakē, 656-658 (**cat. no. 37**). – 28 Phrangōn Street: Markē/Chatzēiōannidēs, Phrangōn 28, 273-280 (**cat. no. 30**). – Many stilts have been found in a workshop at 3 Eurymedontos Street: Cat. Thessaloniki 2006, 5 (**cat. no. 31**). – Also at 19-21 Aristotelous Street: Makropoulou, Aristotelous 19-21, 501-503 (**cat. no. 29**), at Egnatia and G. Bakatselou Street (**cat. no. 32**) at 7 Zephyrōn Street (**cat. no. 36**) and at 45 Vasileōs Ērakleiou Street (**cat. no. 28**), due to be published by Prof. M. Paisidou.

426 Armenopoulos, Procheiron Nomōn, 2.4.15: »Τὸν κατασκευάζοντα ἐν κώμει φοῦρνον κεραμικὸν χρὴ ἀφιστᾶν τοῦτον τοῦ γείτονος, εἴτε θέσις εἴη δευτέρα καὶ γ'. ἢ περαιτέρω, καὶ εἰ μὲν βορειότερος εἴη ἢ ἀνατολικότερος ὁ φοῦρνος, τῆς οἰκήσεως θύρας ἢ θυρίδας αὐτῆς ἐχούσης, ἀποβλεπούσας πρὸς αὐτὸν τὸν φοῦρνον, πήχεις εἴκοσι· ἡ γὰρ τῆς κεραμεικῆς χρεία καὶ ἐργασία ἐν τῷ καιρῳ τῆς τῶν εἰρημένων ἀνέμων προσβολῆς γίνεται· εἰ δὲ νοτιώτερος ἢ δυσικώτερος εἴη ὁ φοῦρνος τῆς τοῦ γείτονος οἰκίσεως καὶ αὐτῆς ἐχούσης θύρας ἢ θυρίδας, ἀφιστᾶν αὐτὸν πήχεις δεκαδύο, χειμερινῶν ὄντων τῶν ἀνέμων καὶ τῆς ἐργασίας τὸ τηνικαῦτα μὴ οὔσης· εἰ δὲ φρακτοὶ ἢ ἐπίπεδοι εἶησαν οἱ οἶκοι, τότε ἀφιστᾶν αὐτὸν τῶν εἰρημένων πήχεων τὸ τρίτον· προτέρας δὲ κεραμικῆς οὔσης καὶ ἑτέρου γείτονος ἄλλην βουλουμένου πρὸς αὐτὴν κατασκευάσαι, τῆς τοῦ γείτονος παλαιᾶς καλυβώσεως χρὴ αὐτὸν τὸν κατασκευάζοντα, εἰ μὲν ἀνατολικοτέρα ἢ βορειοτέρα εἴη ἡ καλύβωσις, ἀφιστᾶν τοὺς φούρνους πήχεις ιε'. εἰ δὲ δυτικοτέρα ἢ νοτιωτέρα εἴη τῶν μελλόντων φούρνων γίνεσθαι ἡ καλύβωσις, πήχεις λ'. Τὰ αὐτὰ δὲ φυλαχθήτωσαν μέτρα τοῖς ἀνέμοις, καὶ ἐπὶ τῶν ἁλωνίων« [Whoever wishes to construct a ceramic kiln in a town must situate it away from every residence, either in the second and third zone, or in sites even farther out than these. And if the kiln is to the north or to the east and the house has a door or a window on the side of the kiln, (it should be constructed) twenty cubits away; because the need for pottery and the relevant works occur at the period of time when the aforementioned winds blow. If the kiln is to the south or to the west of the neighbour's house and the house has a door or a window let it be distanced twelve cubits, because the winds are those of the Winter and then no relevant works are carried out. If the houses are fenced or on the ground flour, then it (the kiln) should be distanced at the one third of the aforementioned cubits. If an older pottery existed and some other neighbour wants to build another one nearby it, if it is to the east or to the north, then the one who builds it must put the kilns fifteen cubits away. If it is to the west or to the south then the future kilns should be built twenty cubits away. The same (measures) regarding the winds should be respected for threshing floors as well].

427 Finds exhibited in the Museum of Byzantine Culture, Thessaloniki.



Fig. 44 Hagioi Apostoloi, 1310-1314.

Finally, workshops for bricks and roof tiles, equipped with long, rectangular kilns, have been located at the field east and west of the city and have been dated to the Late Byzantine period[428]. The type of products of these workshops can be seen in the numerous surviving monuments of the city[429] (**fig. 44**).

Glassworking

After a long period of almost total absence since the seventh century, glass vessels re-appear in the Late Byzantine period, almost exclusively in the form of *unguentaria* and flasks (**fig. 45**). An indirect reference to the distribution of glass vials in early-thirteenth-century Thessaloniki is given in the *Life of Saint Sava* where it is mentioned that he used such a glass vessel to send myrrh from his father's grave to his brother Stephen in Serbia[430]. Among the Late Byzantine glass vessels found in excavations in Thessaloniki, several lentoid and ring-shaped *omoms,* imports from the Arab world, are identified[431]. Most of them are made of brightly coloured glass and on some of them their painted, geometrical decoration is still visible. Those retaining their decoration bear a cold-painted one, unlike their numerous counterparts from Arab territories which bear fired enameling, which is a possible indication of the decoration having been added at a later

428 134 Tsimiskē Street: Cat. Thessaloniki 2003a, 11 (**cat. no. 7**). – 58 Promētheōs Street (**cat. no. 14**). – 91 Monastēriou Street: Makropoulou, Monastēriou 91, 503-504 (**cat. no. 10**). – 93 Monastēriou Street: Makropoulou, Monastēriou 93, 379-380, and Eleutheriadou et al., Sōstikes anaskaphes Thessalonikēs 274-275 fig. 10 (**cat. no. 11**). – 48 Giannitsōn Street: Makropoulou, Giannitsōn 48, 618 and Cat. Thessaloniki 2006, 8 (**cat. no. 9**). – For their new dating, see Makropoulou, Taphoi kai taphes 371 nt. 238, and 373 nt. 240. – Markē, Sōstikes anaskaphes 217-218. – For six new, rectangular kilns, and six water reservoirs, some of them dated to the Roman period and others vaguely dated to the medieval period, excavated at the metro station by the Railway Station, see Acheilara, METRO Thessalonikis 2008, 265-272 and Acheilara, METRO Thessalonikis 2009 (**cat. no. 12**). – For a short overview of the potteries excavated in Thessaloniki see Markē, Sōstikes anaskaphes 217-218.

429 Among others, parts of the city walls and nine churches survive from the Palaeologan building activity, see Vokotopoulos, Mesaiōnikoi naoi 97-110. – Vokotopoulos, Church Architecture 107-116. – Ćurčić, The Role of Late Byzantine Thessalonike 65-84.

430 Teodosije, Žitije Svetog Save 78-79.

431 Cat. Athens 2002, 575-576 nos 811 (A. Tsakalos), 812-813 (D. Makropoulou). – These vessels, most probably perfume sprinklers (their name probably derives from the Arab word for sprinkler, *qumqum*) were produced in large quantities by Ayyubid and Mamluk glass makers, the majority dated to the second half of the thirteenth century, Cat. New York 2001, 246-247 no. 122 (S. Carboni). – Carboni, Glass from Islamic Lands 150-151.

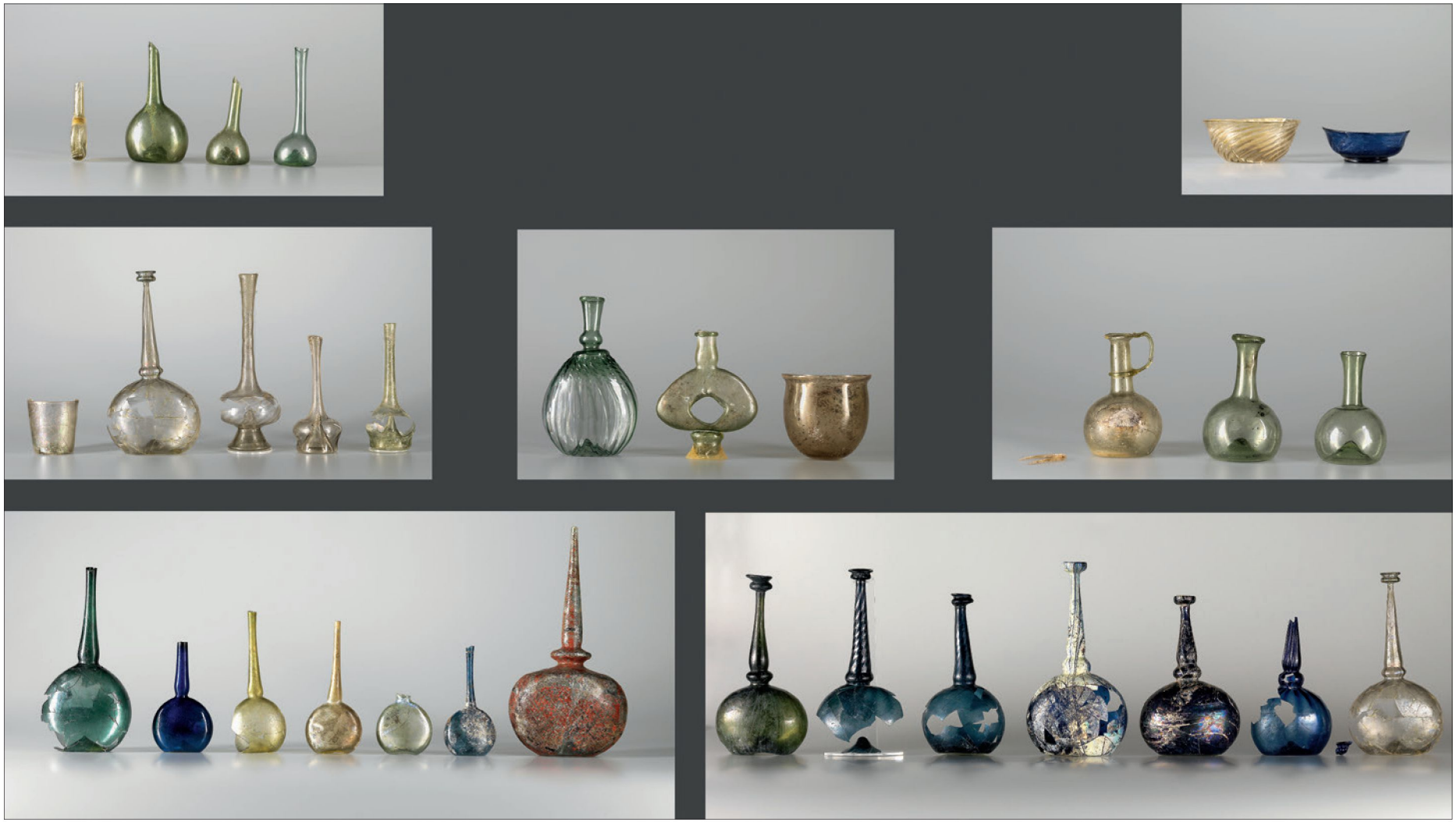


Fig. 45 Glass vessels, Late Byzantine period, Thessaloniki.



Fig. 46 Glass vials, Thessaloniki, Hagios Dēmētrios, fifteenth to sixteenth centuries.

date. Venetian products, mainly ribbed *inghistere/angastaria* flasks, and plain beakers made with high quality, decolourised and slightly pink, Venetian glass, present a second group of imports in the city[432]. No archaeological remains of Palaeologan glass workshops have been unearthed in Thessaloniki; however, among the numerous vessels found in the city some might be local products[433] (**fig. 46**). They cannot be connected with the traditions or the style of any major glass centre. Several examples of them are found in the city, some of them in the complex of Hagios Dēmētrios, and they are minor lentoid receptacles, ill-executed, made of bubbly, bluish glass, and probably could be the ones that, as it is known from fifteenth-century sources, were used, apart from holding fragrants and medicaments, as containers of Saint Dēmētrios' myrrh. The Flemish traveller Joss van Ghistelle described how holy oil trickled from a monumental tomb in the Church of Saint Dēmētrios and Christians collected it in beautiful glass vessels, »proper slasschelins van glase«[434].

Metalworking

During this period, it seems that the gold and silver deposits of Macedonia continued to be exploited, particularly alluvial deposits from river beds, by *chrysōryktai* (χρυσωρύκται), *chrysolektai* (χρυσολέκται) and especially the *ammoplytai* (ἀμμοπλύται), i.e. sand washers, which seems to be the best for the type of mining undertaken in Ropalaia[435], as indicated by micro-toponyms in the region and explicit references in legal deeds, e.g. the *acta* of Mount Athos monasteries[436]. Furthermore, there are some groups of metal objects and jewels that can be considered to be local products with a high degreee of confidence[437].

It appears that in the Late Byzantine period the production of Saint Dēmētrios' reliquaries continued, now showing the altered form of the Saint's sarcophagus[438], as well as the production of lead *koutrouvia*[439]. Also, some of the thirteenth-century glass gems, possibly the ones with Saint Dēmētrios' bust on them, or their prototypes, could have been locally produced, although it appears that they were mainly made in Venice[440].

During the Latin Kingdom of Thessalonica (1204-1224), refined metal objects were still produced there. According to Theodosius, the early-fourteenth-century biographer of the Serbian Archbishop Saint Sava, while residing in Thessaloniki, he commissioned two large icons in 1219, which he asked to be embellished with golden crowns, precious stones and pearls and donated them to his own foundation in the city, the Philokallou Monastery[441].

Silver or gold-plated silver revetments for icons and crosses were made in Thessaloniki throughout the Palaeologan era (**fig. 47**), during the second half of the thirteenth century and up until the first quarter of the fifteenth century[442]. Three groups of revetments can be identified. The first group is dated to the end of the thirteenth to early fourteenth century. They all have in common high-relief haloes, occasionally rendered in open-work, and their background is covered with

432 Antonaras, Two Venetian Vessels 37-40. – Cat. Athens 2002, 579-580 nos 819, 821 (A. Antonaras).

433 On Venetian imports of *angastaria* flasks in the city, see Antonaras, Two Venetian Vessels 37-40. – On a special form of lentoid flask, see Antonaras, Venetian Glass Pilgrim Vessels, which were dated loosely by the author to between the fourteenth and sixteenth centuries, but in fact their dating can be narrowed down to the sixteenth century. – For a general overview of glass vessels, see Antonaras, Forms and Uses passim and especially on Palaeologan vessels 408-422.

434 Papazōtos, Merikes plērophories 51-56. – Mentzos, Proskynēma 156, mentions these vessels and links them with a ring-shaped glass *omom* found in the excavations of the churh, which is clearly an import from the Chaliphates. – Bakirtzis, Le culte de saint Démétrios à Thessalonique 177, where the continuation of Saint Dēmētrios' veneration during the fifteenth century by both Christians and Muslims is discussed. The vessel presented in fig. 5 is a lenticular *omom*, obviously imported from the Arab world, probably from Syria or Palestine.

435 On these terms used in Byzantine texts referring to gold mining and gold miners, see Koukoules, Vios kai politismos, B1, 203-204.

436 Theocharidou, Enkatastasē 27-28. – Theocharidou, Orycheio Peristeras 408 (**cat. no. 76**). – Theodōridēs, To ktēmatologio 417. – Papangelos, Agramades 65-66. On the economy of the area of Peristera and the importance of the mine, see Sampanopoulou, Katalogos 91-92 with all prior bibliography. – Actes de Lavra II no. 90 ln. 1-69, no. 108 ln. 167, 179. – Actes de Lavra III no. 130 ln. 13-16, no. 128 ln. 27-30. – Actes de Xèropotamou no. 25 ln. 29. – On mining and quarrying in Antiquity, see Forbes, Studies in Ancient Technology, vol. 7, passim, and on ancient metallurgy and the techniques of refining and smelting, see Forbes, Studies in Ancient Technology, vol. 8, passim. – For a general overview of mining in Byzantium, see Matschke, Mining 114-120; on metallurgy and metalworking techniques in Byzantium, see Papathanassiou, Metallurgy 121-127.

437 For a short overview of Middle and Late Byzantine jewellery (earrings, bracelets, rings, buckles and buttons) from Thessaloniki and its region, see Antonaras, Middle and Late Byzantine Jewellery passim.

438 Mentzos, Proskynēma 129-140. – Loverdou-Tsigarida, Thessalonique, centre de production 241-254 esp. 244-245.

439 Bakirtzēs, Koutrouvia myrou 523-528. – Byzantine Ampoulae 140-149. – Cat. Athens 2002, 184-185. – Totev, Ampuli kutruvii 205-216, 411-416. – Bitrakova-Grozdanova, Golem Grad Prespa 95-100, with further bibliography.

440 On the medallions, see: Wentzel, Zu dem Enkolpion 11-24. – Loverdou-Tsigarida, Thessalonique, centre de production 245-246. – Foskolou, Glass Medallions 51-73.

441 Radojčić, Ikonen aus Jugoslawien LXI. – Teodosije, Žitije Svetog Save 131. – Živojinović, O boravcima Svetog Save u Solunu 63-71. – Miljković, Žitija 112.

442 Loverdou-Tsigarida, Ependyseis eikonōn 275-391, especially on Thessalonian workshops 280, 286-289, with all prior bibliography. – On two of them bearing epigrams of Manuel Philes see Talbot, Epigrams in Context 82-83 (Virgin of Freising and Virgin Hodegetria from Vatopaidi, donation of the sisters Papadopoulina and Arianitissa).



Fig. 47 Icon of Mother of God Hodēgētria with metal revetment, Vatopaidi Monastery, Mount Athos, last quarter of the fourteenth century.



Fig. 48 Bronze earring, Rentina, fourteenth to fifteenth centuries.

a continuous »carpet« of decorative motifs supplemented with enameling. They bear dedicatory inscriptions placed on the border of the icon, written in capital letters, executed in champlevé supplemented with enameling, mentioning donors connected with Thessaloniki[443].

The second group can be dated to the late fourteenth and early fifteenth centuries. Their decoration is executed in low-relief repoussé supplemented with enameling and in some parts (e. g. haloes and inscriptions on the background) executed in champlevé and enameling in red, dark blue and green hues[444].

The third group of revetments is dated to late fourteenth and early fifteenth centuries and they are executed in *filigranes en ruban.* Their surface is covered with a smooth foil on which are attached fine, smooth strips that form a web of cells which creates mainly geometrical motives[445]. Finds from the region of Thessaloniki witness to the use of this decorative technique in jewellery as well, as for instance in the production of earrings[446] (**fig. 48**).

Several examples of small bronze Greek crosses with round, gem-imitation arm-endings found in three different parts of the city are also considered to be local products[447] (**fig. 49**). Written sources also shed light on both the type of jewellery worn by Thessalonians, or at least of the most precious ones, as well as on their distribution and price. In 1384, when Maria Doblytzēnē (Δοβλυτζηνή) tried to ensure her dowry and the marital gifts she received from her late husband Manuel – an armed horseman of the Regiment of Thessaloniki who was killed that year by the Turks at Chortiatēs – a detailed inventory of the household was conducted by the ecclesiastical tribunal and is enlightening on what such a family could possess in Thessaloniki[448]. In terms of jewellery, seven rings (one with glass inset), earrings, one medallion, one brooch, and a pair of what are though to

443 Loverdou-Tsigarida, Ependyseis eikonōn 287 and nt. 155.

444 Loverdou-Tsigarida, Mikrotechnia Vatopaidiou 481-482, 488 fig. 29. – Tavlakēs/Liakos, Stauros 64-75. – Loverdou-Tsigarida, Ependyseis eikonōn 287 and nt. 158-159.

445 Tsigaridas, Phorētes eikones 392-393. – Loverdou-Tsigarida, Ependyseis eikonōn 287 and nt. 160-162.

446 Unpublished earrings found in Late Byzantine graves at the castle of Rentina, to the east of Thessaloniki, exhibited in the Museum of Byzantine Culture, Thessaloniki (inv. no. BKo 271/51).

447 At least six identical examples have been found in three different Late Byzantine cemeteries of the city. For a short overview of Middle and Late Byzantine jewellery from Thessaloniki and its region, see Antonaras, Middle and Late Byzantine Jewelry 117-126. – For an overview of encolpia excavated from Late Byzantine cemeteries in Thessaloniki, see Kanonidis, Enkolpia esp. nos 8-10 (five examples which were found in two different cemeteries) are local products. – A few more examples along with their stone mould have been recently discovered at the Venizelou Street Metro Station excavation and are dated to the end of the Middle Byzantine period, see 2000-2010 Apo to anaskaphiko ergo 234 fig. 11. – Several more examples of these crosses have been found in central Balkan demonstrating the extended circulation of Thessalonian finds in this region, namely, one similar example was found in the excavations of the tenth to twelfth-century cemetery at Trpčeva Crkva, FYROM: Kepeska, Nekolku krstovi 284 pl. I/2. – Eadem, Trpčeva Crkva 59-60. – Furthermore, an example was found in Serbia in medieval Gradac, as part of a thirteenth-century necklace comprising pearls and amulets mostly dated to the eleventh century, see Petrović, Srednjovekovna nekropola na Donićkom brdu 286 fig. 37:2, and Djurović, Srednjovekovni nakit 45-47 for a detailed presentation with colour photograph.

448 On the property of the family, see Oikonomidès, Properties 176-198. – Oikonomidès, The Contents 206-207.



Fig. 49 Three identical bronze crosses, 1 Ippodromiou Street, Late Byzantine period.

be temple pendants are mentioned; and other household objects are listed, such as fabrics and textiles, furnishing, tableware, icons; all priced in *hyperpyra*[449]. The will of another Thessalonian, the landowner Theodōros Karabas (d. 1314) also mentions, among other things, two silver amulets, two gold rings, two silver rings and a gilded-silver belt as being in his possesion[450].

The aforementioned techniques used for the revetments of wooden icons must have been used for the embellishment of book-bindings as well, although not a single example has survived. The metal parts of the decoration of a fourteenth-century book-binding are preserved, which form some type of *cloisonné* with metal stripes bent to form the monogram of Thessaloniki and probably of the writer and possibly owner of the book, Isidōros Glavas[451]. In addition, several censers[452] as well as parts of a *polykandelon*[453] have been ascribed to Thessalonian workshops[454].

The ring of Kōnstantinos Mastounēs in the Hermitage[455], along with the rings from the Stathatos Collection[456], represent an interesting and rare group of signet rings, probably made in Thessaloniki. It seems probable that they were made under a Western influence and could be dated to the period of the Latin Kingdom of Thessalonica, or after, a period in which it has already been assumed that an enamel workshop was active in Thessaloniki[457].

Written sources shed some light on other facets of the activities of the city's metalworkers. In 1225 Iōannēs Apokaukos, Bishop of Naupaktos, in a letter to the Archbishop of Thessaloniki, probably Constantine Mesopotamites (1225-1227), wrote that he had commissioned a silver seal from a seal maker in Thessaloniki, who was inexperienced and had engraved Mother of God, the *Panhymnetos*, turning her face away from the bishop's titles instead of towards them[458]. This passage offers important information on the continuation of the local production of *voulōtēria* (βουλωτήρια) in the city in a period when the use of seals had diminished considerably[459]. From paleographical clues, a seal of Eirene Komnene Doukaina Palaeologina, dated to the period between 1303 and 1317, is also ascribed to Thessalonian workshops[460] (**fig. 50**).

A small rectangular and inscribed lead reliquary of the mid-fourteenth-century (**fig. 51**) found in the excavation of

449 Actes de Docheiariou 258-265 no. 49. – Oikonomidès, The Contents 206-207. – For an exemplary work on the type of information Late Byzantine texts can offer concerning the types, prices, distribution and functions of jewelery in this period, where among the others Doblitzene's act is included, see Parani, Byzantine Jewellery: The Evidence from Byzantine Legal Documents 186-192.

450 Actes de Chilandar I 208-219 no. 30. – Also, Laiou, Thessalonikē, ē endochōra kai o oikonomikos chōros 88.

451 Astruc, Isidore de Thessalonique 272. – Loverdou-Tsigarida, Thessalonique, centre de production. – Cat. Paris 1992, 471 no. 363 (P. Hoffmann). The matrixes used to stamp on the leather surface of the book-binding geometrical and floral motives can be ascribed to local artisans as well, since they do not occur in Constantinopolitan and Cretan contemporary extant bindings.

452 Loverdou-Tsigarida, Thessalonique, centre de production 254. – Loverdou-Tsigarida, Mikrotechnia Agiou Orous 353-354 no. 9.27.

453 Todorović, Nalazi iz stare solunske livnice 91-124 esp. 114-115 and 120, loosely connecting modern products with Byzantine prototypes.

454 Kissas, Mesaiōnikē Thessalonikē 32-33. – For a workshop for smelting metal, dated to the Ottoman period, see Markē, Phōtakou 3, 520-521 (**cat. no. 60**).

455 Kissas, Zlatni pečatni prsten 113-114. – Cat. New York 2004, 44-45 (V. N. Zalesskaya).

456 Bosselmann-Ruickbie, A 13th-century Jewellery Hoard from Thessalonica 219-232, where a group of gold rings and bracelets, assumed to be found in the area of Thessaloniki, are discussed, with some examples among them probably presenting local products.

457 Wessel, Byzantine Enamels 185. – Cat. New York 1997, 498-499 no. 335 (H. C. Evans).

458 Bees, Unedierte Schriftstücke aus der Kanzlei des Johannes Apokaukos 124:87-92: »Ὁ Δημήτριος ἀπεικόμισέ μοι τὴν ἀργυρέαν σφραγῖδα· οὐκ ἐγλύφη δὲ καλῶς ἡ ἡμετέρα πανύμνητος· ὁρᾷς; κατενωτίζεταί μου τὰ γράμματα καὶ τὸ πρόσωπον αὐτῆς ἀποστρέφει τοῦ μὴ βλέπειν ἐπὶ τοὺς τῶν πιττακίων μου τίτλους· δέον ὂν ἐπιστροφήν πρὸς τὰ γραφόμενα ἔχειν, ἐκ τῆς ἐναντίας διαγλυφῆς τε καὶ ἐπινεύσεως« [Dēmētrios brought me the silver seal. Our All-Hymned (the Virgin Mary) was not carved correctly. You see? She has her back turned to my letters and her face is turned away so she does not see my titles on my inscriptions. She should be turned towards the inscriptions, the reverse of the (present) engraving and inclination of her head]. – For additional comments on the text see Lampropoulos, Iōannēs Apokaukos 234-236, where the messenger Dēmētrios is erroneously interpreted as the saint, depicted on the seal.

459 Leontiadēs, Molyvdovoulla intro 33-42.

460 Leontiadēs, Molyvdovoulla 59-61 no. 8. Letters »A« and »Δ« are identical to the peculiar forms that were used by the mint of Thessaloniki.



Fig. 50 Lead seal of Eirēnē Komnēnē Doukaina Palaeologina (1303-1317).

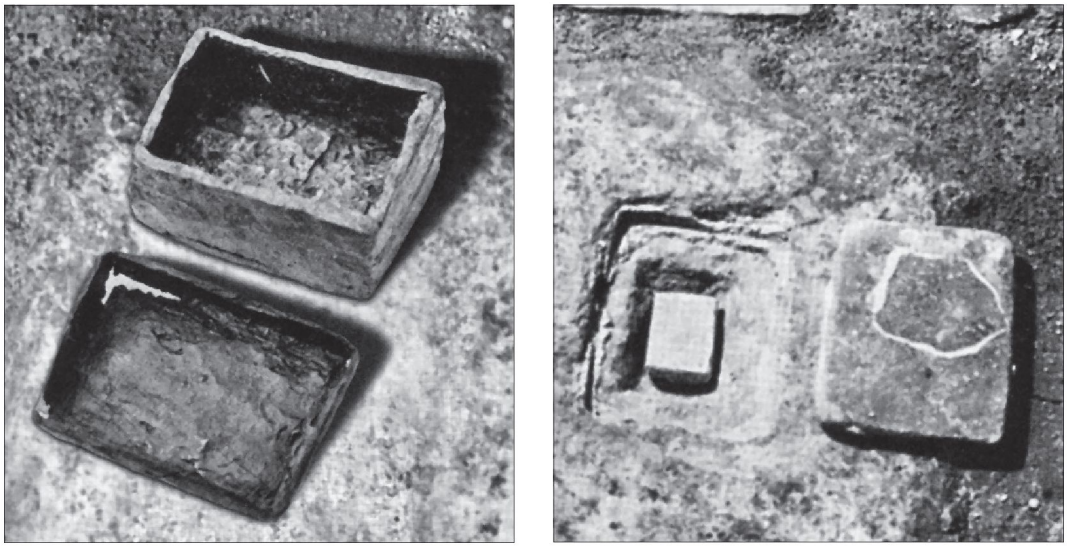


Fig. 51 Sōtēras' Chapel, *enkainion* and its reliquary, fourteenth century.

the *enkainion* (*confessio*) of the Sōtēras chapel, but possibly originally used in another nearby church, can also be considered a local product[461]. In addition, locally produced gold embroidery work can also be assumed to represent the work of local metalworkers in producing the hundreds of metres of wire, lamellae and gold and gold-plated silver threads used in these works of art[462].

Finally, among the other metalworking activities of the Palaeologan period, the metal alloy and copper coins minted in Thessaloniki should also be included[463]. Silver ingots, called »of Thessaloniki« (*peciae Salonichi*), weighing eleven *litrae* (pounds) and one ounce, were probably also minted there, used for uncoined trade, or even for distribution of verified purity metal to artisans/jewelers[464]. Apart from the evident influence of Thessalonian minting in the iconography and production techniques of the Balkan states' coinage, it has been also suggested that the moulds for the coins of the Serbian King Stefan Radovan (1227-1234) were made in Thessaloniki[465].

Stoneworking

An unfinished icon of Christ and another with Hosios David from the early fourteenth century give testament to the activity of a workshop specialising in marble icons in the city, continuing the city's Middle Byzantine tradition[466] (**figs 52-53**).

A workshop specialising in champlevé decoration was probably established in Thessaloniki in the late thirteenth or early fourteenth century. Its works – ambos, templa and sarcophagi – are found throughout Western Greece, Mace-

461 Kourkoutidou-Nikolaidou, To enkainio Sōtēros 205-217. – Kourkoutidou-Nikolaidou, Saviour 42-47. – Velenēs, Leipsanothēkē-enkainion 257-272.

462 Palaeologan gold embroideries are discussed below.

463 Touratsoglou/Protonotarios, Les emissions de couronnement 68-76. – Bendall, Thessalonican Coinage 105-115. – Bendall/Donald, The Later Palaeologan Coinage passim. – Bendall, Palaeologan Gold Coins. – Touratsoglou, L'atelier monétaire de Thessalonique. – Protonotarios, John V and Anna of Savoy in Thessalonica. – Touratsoglou, Ta nomismatika pragmata. – Morrisson, The Emperor, the Saint, and the City 173-203, with all prior bibliography.

464 According to a document of 1408 (Archivio di Stato di Venezia, Giudici di Petizion, Sentenza a giustizia, reg. 12, f. 34r), referring to a deal of 1384 where »two pieces«, i. e. silver ingots of Thessaloniki (*pecias duas Salonichi*), are mentioned. See Morisson/Ganchou, Lingots de Thessalonique 164-168. – On the procedure of making and verifying silver and gold ingots in the mint of Venice at the same period, see Stahl, Zecca 334-336.

465 Touratsoglou, L'atelier monétaire de Thessalonique 185-186.

466 Mentzos, Êmiteles anaglypho 262-269. – Tsilipakou, Vyzantines marmarines eikones 340-344, especially on Hosios David 317-328, and on Christ 340-344. – Pazaras, Glyptikē stē Makedonia 475-476.

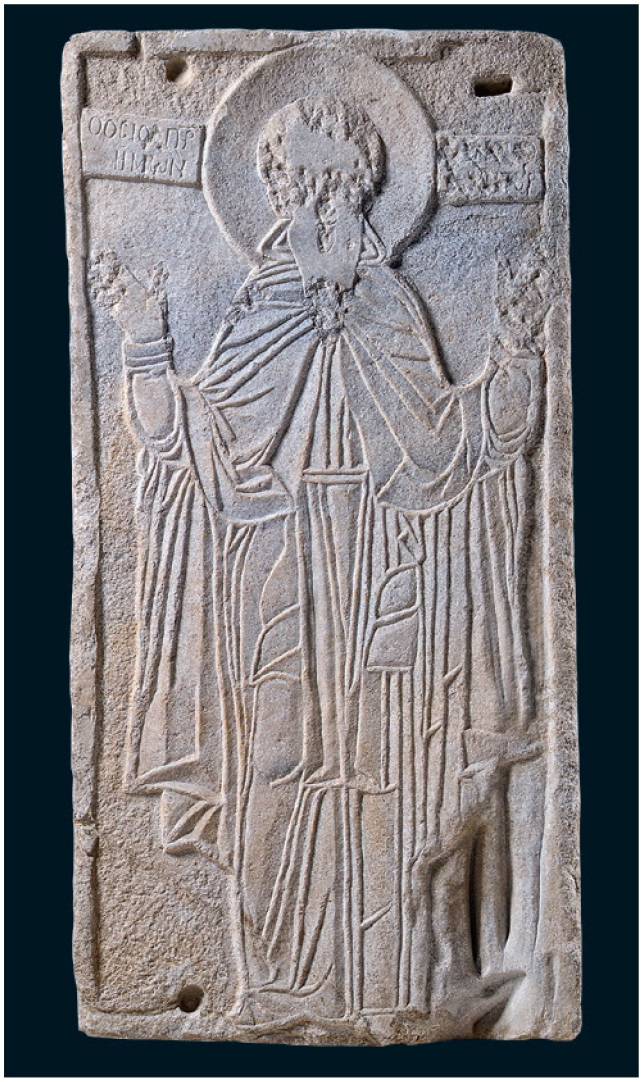


Fig. 52 Marble icon, Hosios David, thirteenth to fourteenth centuries.



Fig. 53 Unfinished Marble icon, Christ, thirteenth to fourteenth centuries.

donia and Thessaly, indicating that we should consider it to have been an artistic centre with a wide-ranging influence[467]. The style is characterised by a mainly geometrical and floral decoration supplemented with birds and imaginary animals, representing an Islamic influence on its overall carpet-like effect[468].

Apart from the prevailing champlevé technique, decorative sculptures made with mixed techniques and decorative themes using earlier motives and ways of rendering them also appear in Thessaloniki, as in Macedonia in general. Examples of such sculptures include the fourteenth-century pseudosarcophagus of a certain Michaēl from Chortiatēs[469]; the pseudosarcophagus of Manuēl Tarchaneiōtēs Kourtikēs made at the end of the fourteenth century which was found in Thessaloniki[470]; and the early-fourteenth-century templon of Hagios Nikolaos Orphanos[471] (**fig. 54**).

A capital with the Palaeologos monogram from Hagios Dēmētrios' complex and an epistyle probably associated with it, which is now in the Museum of Byzantine Culture, originally from a templon or a funeral monument in all probability, should also be considered to be the work of a fourteenth century workshop operating in Thessaloniki[472]. Another type of what is probably local work is the marble reliquary of Saint Dēmētrios preserved in the Great Lavra Monastery, which renders the altered, Late Byzantine form of the Saint's sarcophagus[473]. Furthermore, several Late Byzantine inscriptions, mainly funerary ones, are preserved, shedding light on other, simpler types of works executed by

467 Pazaras, Reliefs of a Sculpture Workshop 159-182 esp. 162. – Pazaras, Anaglyphes sarkophagoi 165-167. – Pazaras, Glyptikē stē Makedonia 476-477.
468 Pazaras, Reliefs of a Sculpture Workshop esp. 160. – Pazaras Glyptikē stē Makedonia 476-479.
469 Pazaras, Glyptikē stē Makedonia 479, with earlier bibliography.
470 Kampourē-Vamvoukou, Anaglyphe plaka sarkophagou 90-108.
471 Xyngopoulos, Tessares mikroi naoi 39-40 fig. 21. – Pazaras, Glyptikē stē Makedonia 479.
472 Tzitzibassi, Palaeologan Monograms 81-97. – Discussed also in Ousterhout, Byzantium between East and West 153-156.
473 Mentzos, Proskynēma 140-150. – Loverdou-Tsigarida, Thessalonique, centre de production 241-254 esp. 244-245.
474 Tsigaridas/Loverdou-Tsigarida, Katalogos 79-85, 91-93, 97-99, 103-107. – Unpublished pieces are on display in the permanent exhibition of the Museum of Byzantine Culture.



Fig. 54 Marble templon of Hagios Nikolaos Orphanos, Late Byzantine period.

local sculptors[474]. In addition, it has been suggested that a small icon carved in steatite is also a Thessalonian work[475]. Finally, indirect evidence of the presence of marbleworkers or masons in the city is offered by the legal texts and contracts of the period. Here, the word *Marmaras* is found as a surname, in addition to evidence of a hierarchical organisation found in references to the chief of the builders (πρωτομαΐστορα τῶν οἰκοδόμων)[476].

Mosaics

The presence of a workshop of mosaicists in Thessaloniki, even if only temporary, can be deduced from the wall mosaics of the Hagioi Apostoloi, fragments from an anonymous church in the upper town, and two mosaic icons[477] (**fig. 55**). The two mosaic icons that are stylistically connected to the art of Thessaloniki further corroborate this hypothesis: the mosaic icon of Saint John Evangelist at Great Lavra in Mount Athos, connected with the fourteenth-century painting of Thessaloniki, on which a silver revetment has been added later[478]; and the mosaic icon of Saint Dēmētrios with a *koutrouvion* (lead ampoula) on it, now in Sassoferrato, that has a silver revetment of the Thessalonian type and is considered to be from Thessaloniki and possibly meant for a wealthy pilgrim[479].

475 Varalēs, Eikonidio apo steatitē 17.

476 A Kōnstantinos Marmaras is mentioned in a contract of June 1314 (Actes d'Iviron III 187-189 no. 73 ln. 8) selling houses to Ivērōn Monastery in the quarter of Acheiropoiētos. – A Geōrgios Marmaras, chief of the builders (πρωτομαΐστωρ τῶν οἰκοδόμων), known from other acts as well between 1322 and 1327 (Actes de Chilandar nos 84, 85. – Actes de Zographou no. 25), appears as a witness in a contract of March 1326 (Actes d'Iviron III 297-301 no. 84 ln. 33), offering an indication for the profession of marbleworkers and the existence of a corporation or guild of builders in the city. – For an opposite opinion against the assumption that builders were organised in guilds, see Maniatis, The Domain of Private Guilds in the Byzantine Economy 343 nt. 13.

477 On Hagioi Apostoloi: Xyngopoulos, Psēphidōtē diakosmēsē passim. – Mauropoulou-Tsioumē, Byzantine Thessaloniki 130-136. – Kyriakoudēs, Klassikistiko pneuma 237-238. – Kourkoutidou-Nikolaidou/Mauropoulou-Tsioumē/Bakirtzēs, Psēphidōta Thessalonikēs 296-353. – The detached fragments were found in a rescue excavation at 14-16 Armatolōn Street: Cat. Thessaloniki 2005, 5. – On both aforementioned monuments and the phenomenon of gold glass tesserae spoliation from Hagioi Apostoloi, Rotonda and Hagios Dēmētrios, see Bakirtzis/Mastora, Ou sont-elles passées, les tesselles 55-66.

478 Loverdou-Tsigarida, Thessalonique, centre de production 251 fig. 17. – Chatzidakis, Une icône en mosaïque de Lavra 71-83.

479 Loverdou-Tsigarida, Thessalonique, centre de production 247-248 fig. 7. It is dated to the second half of the fourteenth century and belonged to Cardinal Bessarion's secretary Niccolò Perotti, later archbishop of Siponto (1458-1480). – Cutler, From Loot to Scholarship 253-254, redates it to the middle of the fifteenth century on the basis of the representation of Perotti's blazon on the saint's shield.



Fig. 55 Hagioi Apostoloi, wall mosaic, Entrance into Jerusalem, the Jews, c. 1310-1314.

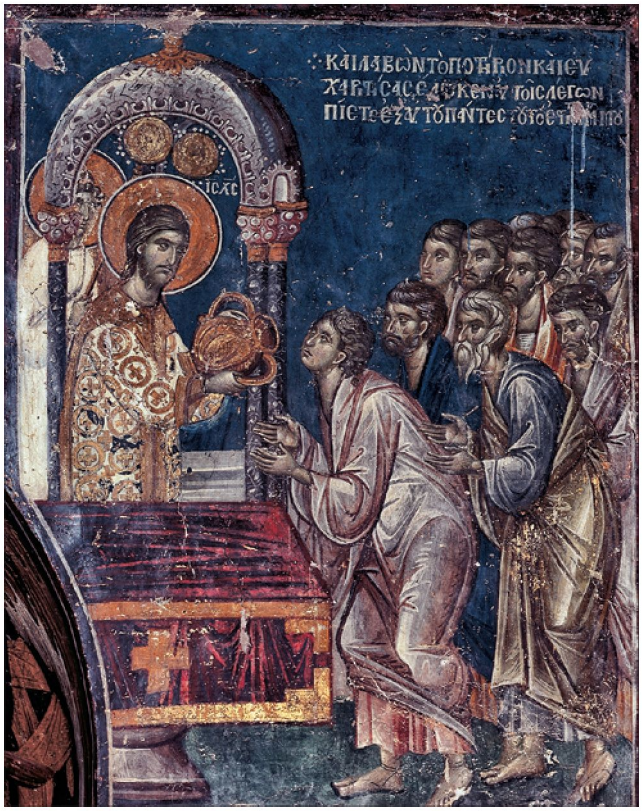


Fig. 56 Hagios Nikolaos Orphanos, wall painting, Communion of the Apostles, 1310-1320.

Painting

Artistic workshops were active in Thessaloniki during the Latin Kingdom of Thessalonica. In the hagiography of Saint Sava, one reads that in 1219 he invited local artists to paint large icons of Christ and the Virgin at Philokalou Monastery in Thessaloniki[480]. During the Palaeologan period, painters from Thessaloniki, apart from their works in the monuments of the city itself[481] (**fig. 56**), were also active throughout the Balkans and especially during the late thirteenth century and into the first half of the fourteenth century when Thessalonian painting culminated. For the first time we see some artists signing their works. A number of examples survive, attesting to the work of Eutychios and Michaēl Astrapas, Geōrgios Kalliergēs, Manouēl Panselēnos, and Michaēl Proeleusis[482]. Apart from wall paintings, Thessalonian painters also produced wooden icons of all sizes and purposes: icons for iconostasis, adorational ones, processional, usually bilateral ones, and smaller ones for private worship (**fig. 47**). Notable examples of the icons attributed to Thessalonian painters are the Hodēgētria and the Hospitality of Abraham kept at the Vatopaidi Monastery, but originally from Hagia Sophia in Thessaloniki[483], two examples with Christos Pantokratōr[484], as well as one of the Annunciation[485]. Another icon, that of Saint Dēmētrios

480 Radojčić, Ikonen aus Jugoslawien LXI. – Teodosije, Žitije Svetog Save 131. – Miljković, Žitija 112. – Saint Sava invited the best painters and asked them to swiftly paint two »standing« icons, i. e. full-figured ones, of Christ and Virgin Mary in the vision of the Prophet Daniel; additionally, Saint Sava had both icons decorated with golden wreaths, precious stones and pearls. – Kissas, A Sepulchral Monument in Hagia Sophia 39. – Živojinović, O boravcima Svetog Save u Solunu 63-71.

481 See Mauropoulou-Tsioumē, Mnēmeiakē zōgraphikē 656-668. – Mauropoulou-Tsioumē, Vyzantinē Thessalonikē 119-169. – Kampourē-Vamvoukou/Papazōtos, Palaiologeia zōgraphikē stē Thessalonikē passim. – Kyriakoudēs, Klassikistiko pneuma passim. – Gerstel, Civic and Monastic Influences 225-239.

482 Eutychios and Michaēl Astrapas: Miljković-Pepek, Deloto passim. – Kissas, Solunska umetnička porodica 35-37. – Miljković-Pepek, L'atelier artistique 491-494. – Todić, Signatures des peintres 643-662. – On the presence of Geōrgios Kalliergēs in Thessaloniki in 1322, see Theocharidēs, Vyzantinos zōgraphos Kalliergēs 542-544. – On his work in general, see Pelekanidēs, Kalliergēs passim. – Manouēl Panselēnos: Xyngopoulos, Manouēl Panselēnos passim. – Vasilakē, Ypērxe Manouēl Panselēnos 39-54, where the historical accuracy of the name of the artist is questioned. – Tsigaridas, O kyr Manouēl Panselēnos 2-11. – Tsigaridas, Phorētes eikones stē Makedonia 123-55. – Tsigaridas, Toichographies Agiou Euthymiou passim. – Papangelos, O Thessalonikeus 64-65, where the presence of a painter »κὺρ Μανουὴλ« is noted as well as that of a »κὺρ Μιχαὴλ τὸν προελεύσιν« and of a »κὺρ Γεώργιον Καλλιέργην« in fourteenth-century Thessaloniki, according to the acta of the Mount Athos monasteries. – Michaēl Proeleusis: referred to as »ἐντιμότατος ζωγράφος«, i. e. most worthy (Actes de Chilandar 46-49), and apparently successful enough to be able to become the founder of a monastery near Thessaloniki, Magdalino/Darrouzès, Some Additions and Corrections 280-281. – Babić, Mihajlo Proelevsis 59-61. – Generally on the social status of the painter in Late Byzantine society see Kalopisi-Verti, Painters 139-158. – Kalopisē-Vertē, Oi zōgraphoi 121-159 esp. 146-159.

483 Tsigaridas, Phorētes eikones 392-393.

484 N. Chatzēdakē, in Cat. Athens 2000, 192-197 nos. 54-55, both icons originally from Thessaloniki, from Hagios Mēnas and from Hagia Sophia, respectively.

485 Tsigaridas, Phorētes eikones 392-393. – On the revetment, see Loverdou-Tsigarida, Mikrotechnia Vatopaidiou 497 fig. 331. – For the revetments of all of them, see Loverdou-Tsigarida, Thessalonique, centre de production 250-251.

dated to the thirteenth or fourteenth century, has also been ascribed a Thessalonian origin. It has also been noted that the stucco decoration of its background imitates the then apparently fashionable and more expensive technique of silver revetment[486].

Next to the aforementioned, highly valued artistic works, a totally different type of depiction should be added that gives important realistic information about this period. These are the late fourteenth century graffiti preserved on the mural painting of Prophētēs Elias church, where several types of vessels – small boats, oared ships or galleys, and sailing ships – are rendered, sometimes in detail and quite naturalistically, offering an insight into the sorts of ships that could be seen in the harbour of Thessaloniki[487].

Woodworking

It is only natural to assume that apart from ordinary carpenters, there were also wood carvers, covering both secular and religious needs active in Thessaloniki[488] (**fig. 57**). No examples of their work have survived in the city, but it appears that in the ark of Mount Athos at least two of them are preserved, namely, a pair of lecterns donated by the Despot Andronikos Palaeologos preserved in Vatopaidi. They illustrate the high level of Thessalonian craftsmanship[489]. They are carved with floral decoration surrounding small plaques bearing, in some cases on a red or blue background, geometrical patterns, depictions of the life and hymnography of the Virgin, *The Akathist Hymn*, as well as other religious figures and scenes from the Old Testament.

Indirect evidence of the work of Thessalonian carpenters is found in the ship graffiti of the Prophētēs Elias, dated to the last quarter of the fourteenth century. Thessaloniki was an important centre for inter-regional trade with western Greece and the western Balkans, and a part of the Venetian trading system. Its port apparently harboured Venetian vessels during the sailing months of the year[490]. Among larger boats, a few single-masted vessels are depicted in contemporary graffiti. These have been identified as small fishing boats, which, in all probability, were made by local shipbuilders[491].



Fig. 57 Wooden lecterns from Vatopaidi Monastery, first half of the fifteenth century.

Textile Production and Tanning

Although it has long been considered that there was no important local production of fabrics in the city and that what was found were mainly Italian imports[492] – Italian cloths that were cut there, then sold retail and/or distributed to western Greece and the Balkans – it appears that the local manufacture of silks, woollens and mixed fabrics indeed existed, even if it was restricted to medium and low-grade products and was carried out on a fairly limited scale[493]. It is also known that in the mid-twelfth century many Jewish families in Thessaloniki were engaged in sericulture[494]. Local manufacture of silks, woollens and mixed fabrics did exist, providing threads and fabrics for the famous gold-embroidered silk fabrics that are ascribed to the workshops of the city. An example of a Thessalonian product is mentioned in a letter from the Constantinopolitan Patriarch Gregory of Cyprus (1283-1289) to his old friend Iōannēs Stavrakios, metropolitan Chartophylax of Thessaloniki, that he had been waiting two years for a hat to be woven for him in Thessaloniki – »σκιαδοψείδιον ἱστουργεῖσθαι« – and that even if he had a head the size of

486 Tsigaridas, Phorētes eikones 375-377 fig. 318. – Loverdou-Tsigarida, Thessalonique, centre de production 251 fig. 18.
487 Babuin/Nakas, Byzantine Ship Graffiti 8-17. – On the extensive use of wooden vessels in Byzantium and their names see Sarantē, Ta vyzantina epitrapezia skeuē 536-541.
488 On references to wood carvers and their tools in Byzantine texts, see Koukoules, Vios kai politismos, B1, 208-209.
489 Nikonanos, Xyloglypta Agiou Orous 296-297. – Nikonanos, Xyloglypta Vatopaidiou 536-546.
490 Laiou/Morrisson, The Byzantine Economy 198, with further bibliography.
491 Babuin/Nakas, Byzantine Ship Graffiti 11 fig. 8.
492 Laiou, Thessalonikē, ē endochōra kai o oikonomikos chōros 188-189, 191.
493 Jacoby, Foreigners and the Urban Economy 85-132 esp. 107. – Matschke, Tuchproduktion 47-88 esp. 66-67, 69-76. – For gold-weft and gold-embroidered silk garments (probably Palaeologan) from a grave in Hagia Sophia, see Xyngopoulos, Tychaia eurēmata 65-66 fig. 5. – On the hypothesis that the narthex and the southern ambulatory of the Hagia Sophia were used from the early tenth century for the burials of Thessaloniki's metropolitans, see Kissas, A Sepulchral Monument in Hagia Sophia 36.
494 Benjamin of Tudela 64.

a Cyclops' or a mountain it should have been finished in that time[495].

Moreover, it is known that substantial transactions took place in the mid-fourteenth century concerning exports of Thessalonian linen cloths and fustian, such as when Paolo Osbergerio from Chios and the Genoese Domenico di Saziglia started an enterprise in July of 1349 by buying eighteen balls of linen cloth and fustian produced in Thessaloniki – »telas et vellexi de Salonichi« – which were bought for 2,000 hyperpera and were to be shipped to Peran[496]. Also, in mid-fifteenth century sources, a special Thessalonian type of hat, σκούφια θεσσαλονικαία, is mentioned. After his imprisonment at Patras in 1429, Geōrgios Sphrantzēs received from the then Despot and later Emperor Constantine XI, several beautiful textiles and a decorated sword, along with a »σκούφιαν θεσσαλονικαίαν μετὰ χρυσοκοκκίνου χασδίου ἐνδεδυμένην«, a hat from Thessaloniki lined with golden-red cotton[497]. A form of subtle fabric was known to the Ragusians, even after the sack of the city by the Ottomans, as *Solunschi*, i. e. Thessalonian. A Ragusian priest mentioned a »tovallia de Salonich« in 1348, which was worth 30 *grossi*; probably referring to an ecclesiastical-liturgical textile or an altar cloth[498]. In addition, Solunschi is mentioned in the story of Jakov Radovanović, a cloth shearer (*cimator pannorum*), who was going to Kastoria (»ad civitatem dicitur Costur«) to visit his brother-in-law in July of 1463. He received from a Ragusian chancellor »ducatum unum eu uncias decem auri fillati in canellis XXIII«, a gold ducat and ten ounces of gold thread in twenty-three cane*llis* (possibly »reels«), which he was supposed to sell in Kastoria and then invest the proceeds »in pellibus rubeis turcheschis et in tella subtili que dicitur Solunschi«, i. e. »in red Turkish leathers and in subtle textiles which are called Thessalonians«, and bring them to Dubrovnik[499]. Furthermore, it is known that Venetians imported cloth from Thessaloniki to Melenikon[500].

The archaeological evidence could be helpful, as workshops with small cisterns have been located in the city that could be connected with fabric dyeing processes, unfortunately no firm dating for the findings is possible. Besides, it should be considered as unlikely that a city of the size and the historical continuity of Thessaloniki would have no workshops for producing or dyeing fabrics, even of lower quality, throughout the Palaeologan period. One workshop of this kind, has been excavated at the east part of the centre, almost on the *Via Regia*[501], while a second one, also dated to the Palaeologan period, which has been identified as a tannery, was excavated very close to the western city walls[502].

The name of only one saddler from Thessaloniki, Nikolaos Kamoudēs, is preserved in a legal document of 1264, without any further details about his workshop or his products[503]. Tannery products are almost never preserved due to the humid climate of the region, with the rare exception of a pair of leather shoes, badly preserved, discovered in one of the graves under the pavement of the Chapel of Sōtēras[504]. The leather binding of a fourteenth-century book with impressed and applied decoration is the second preserved example of this craft in Palaeologan Thessaloniki[505].

Gold-Embroidering

As gold-embroidering activity leaves no other real evidence than the embroidered fabrics, the *aer-epitaphios*[506] (dated c. 1300) that was found in the early twentieth century in Panagouda's Church presents a magnificent witness to the activity of a local gold-embroidery workshop in Thessaloniki[507]

495 Eustratiades, Grēgoriou tou Kypriou epistolai 19-20 letter 82: »Τὸ δὲ σκιαδοψείδιον ἱστουργεῖσθαι φής, καὶ ὁ λόγος ἐμοὶ πιστός· ὅμως μέχρι τίνος πιστὸς προβήσεται, διετίαν ὅλην ἱστουργούμενον; Εἰ γὰρ Κύκλωπος, τὶ λέγω Κύκλωπος, εἰ γὰρ ὄρους εἴχομεν κεφαλήν, καὶ ὑπερπεριττεῦον ἂν ἐφάνη τὸ διὰ τοσούτου γινόμενον« [The hat, you say, has been woven, and I believe you. But up to what point will I continue believing you, since for two whole years it has been in the weaving? Because, if we had the head of Cyclops – why do I say Cyclops? – if we had the head of a mountain, there would have been time enough and more for it to be completed]. – Kountoura-Galanakē, Iōannēs Staurakios 387.

496 Matschke, Tuchproduktion 70-72. – Jacoby, Foreigners and the Urban Economy 116. – Laiou, the Agrarian Economy 348. – I thank Dr N. Bonovas for his help with the translation of the German texts.

497 Matschke, Tuchproduktion 69-70. – Sphrantzes, Memorii 38, 19.4-3. »ἔφερόν με εὐεργεσίαν αὐτοῦ ταμπάριον διπλὸν χαμουχᾶν πράσινον ἀπὸ τὴν Λούκκαν ἀξιόλογον, μετὰ καὶ πρασίνης τζόχας καὶ καλῆς ἐνδεδυμένον […] καβάδι χρεμεζῆν χαμουχᾶν μετὰ βαρέου καταράχου ἐνδεδυμένον, κουρτζουβάκιν χαμουχᾶν χρυσὸν προύσινον καὶ φωτᾶν προύσινον καὶ σπαθὶν ἐγκεκοσμημένον […] σκούφιαν θεσσαλονικαίαν μετὰ χρυσοκοκκίνου χασδίου ἐνδεδυμένην« [they brought me gifts from him, a notable green *double tabarion* (cloak) of *chamoucha* (silk brocade) from Lucca, lined with a fine green felt (…) a *kavadi* (a luxurious garment with sleeves) of red *chamoucha* (silk brocade) with a *katarachon* (heavy lining), *kourtzovvaki* (short trousers) of gold *chamoucha* from Prousa (Bursa), and a waistband (or apron?) from Prousa (Bursa), a decorated sword, and a hat from Thessaloniki lined with red-gold *chasdio* (sturdy cotton)]. The text has been recently published in Italian with partly different translation, see Sphrantzae, Chronicon esp. 56-59.

498 Matschke, Tuchproduktion 69-70.

499 Historical Archives in Dubrovnik-HAD, *Diversa notariae* vol. 47 f. 40. – Krekić, Notes on Dubrovnik's Relations with the Levant 275.

500 Matschke, Commerce 772.

501 Markē/Kommatas, Iasonidou 6, 333 (**cat. no. 81**).

502 A rescue excavation at 12 Zephyrōn Street: Cat. Thessaloniki 2006, 7 (**cat. no. 87**).

503 With this document the Ivērōn Monastery gave the *selopoios* (σελοποιὸς), saddler Nikolaos Kamoudēs and three generations of his inheritors, use of their dependency of Hagios Klēmēs in the quarter of Hagios Paramonos in Thessaloniki for four *hyperyra* per year provided that he improved substantially the church and the other premises of the dependency. Actes d'Iviron III 103-108 no. 60. – The same Kamoudēs is also mentioned at 1295 in Actes d'Iviron III no. 68.

504 Kourkoutidou-Nikolaidou, Saviour 34, 39. – On the work, the tools and products of Byzantine shoemakers, see Koukoules, Vios kai politismos, B1, 214-215, and more thoroughly Koukoules, Peri tēs ypodeseōs 106-127.

505 Astruc, Isidore de Thessalonique 261-272 esp. 267-272.

506 *Aer* (ἀὴρ) is a chalice veil which was used during the Great Entrance and the preparation of the gifts for the Eucharist on which Holy Communion is depicted. *Epitaphios* (ἐπιτάφιος), a larger veil, on which is depicted the Lamentation, was and stil is used during Holy Week as part of the ceremonies marking the death and resurrection of Christ. For few weeks after Easter it is placed on the Holy Table. For a detailed explanation of the use of epitaphios veil and their use in monumental painting, see Gerstel, Beholding 76-77.

507 The basic study on the techniques applied by gold-embroideries is Chatzēmichalē, Crhysoklavarika 447-498. – For references in Byzantine texts, see Koukoules, Vios kai politismos, B1, 209-210, B2, 41-47. – For an overview on the subject, see Johnstone, The Byzantine Tradition in Church Embroidery passim, and especially on Late Byzantine clerical vestments and the evolution and changes that their decoration underwent, see Woodfin, The Embodied Icon passim.

(**fig. 58a-i**). Designs of a great artist of the Volume style, comparable to the art of Michaēl Astrapas and Eutychios, are meticulously executed on it by skilful embroiders – the *chrysoclavarii* or *chrysostiktes* mentioned in the sources – using silver and gold thread, as well as red, blue and green thread on red silk fabric backed with linen cloth[508]. There are few more extant ecclesiastical embroideries that can be connected with Thessaloniki, either due to their direct similarity with Thessaloniki's *epitaphios*[509], or due to the fact that their donors were from Thessaloniki[510]. Furthermore, finds from a Palaeologan grave in Hagia Sophia where remains of at least three fabrics were preserved, offer a glimpse of the precious garments of the city's aristocracy[511]. Finally, an independent gold-embroidery workshop owned by the *chrysostiktēs* (χρυσοστίκτης) Palatēs, who worked alongside his fellow-craftsmen, is attested to in written sources in Thessaloniki in the late 1350s. Among other things, we find mention of his work embellishing the sacerdotal vestment of the local archbishop, the later canonised (Saint) Grēgorios Palamas, with gold[512].

Perfumery and Apothecaries

Myrepsoi (μυρεψοὶ), literally craftsmen who made and sold spices, fragrances and dyes, also acted as apothecaries and are known to have had their own market in Constantinople selling imported aromatic goods[513]. They are also mentioned in Late Byzantine Thessaloniki as having *myrepsika ergastēria* (μυρεψικὰ ἐργαστήρια), perfumaries or apothecaries, and as being organised in a guild in which even *archontes,* local officials, were involved. A contract of 1320, recording the sale of houses in the Acheiropoiētos quarter from Anna Paximadō to the Monastery of Ivērōn, is witnessed by the *exarch* (ἔξαρχος) of the guild of the *myrepsoi* of Thessaloniki, Theodōros Vrachnos. The signature of another Thessalonian *myrepsos*, Theodōros Chalazas, is also found in the same document[514].

A perfumery near Hagios Mēnas, with two display benches on the pavement, is known from a document issued in July 1400. Sometime before 1396, it was rented by Kōnstantinos Samaminthēs from the Church (Hypomimnēskontos Monastery). He also rented two nearby money-changing tables and was granted the right to unite them with his workshop and transform them into a single *myrepsikē provolē* (μυρεψικὴ προβολὴ), i.e. display bench, apparently widening the façade of his shop into the street and so improving its status[515].

Thanks to a preserved early-fifteenth-century notebook, it is also known that the metropolis of Thessaloniki owned several *myrepsika ergastēria* in Thessaloniki in 1422, which it rented out to a certain Mouzalōn. A Constantinopolitan *archōn*, Sevastos Myrepsos, is mentioned in the same document, but in connection with a banking transaction dated 1426[516].

Scribal Activity

An aspect of classicism that was predominant in Palaeologan Thessaloniki gave rise to the expansion of scriptoria, which contributed to the rejuvenescent spirit of the times. Classical, religious and law texts, and occasionally books in Hebrew,

508 Kondakov, Pamjatniki 206. – Le Tourneau/Millet, Un chef-d'oeuvre 259-68. – Boura, The Epitaphios of Thessaloniki 211-214 figs on p. 215-231. – For a thorough technical examination of the epitaphios and its contemporary embroidered silks, see Muthesius, The Thessaloniki Epitaphios 175-206. – For a detailed description of this object and a colour illustration of it, see Cat. Athens 2013, 155-157 no. 74 (A. Antonaras).

509 For a *podea* (ποδέα), i.e. apron, an embroidered cloth hung under an icon, from Chilandar that bears identical motives with the epitaphios, see Bogdanović/Djurić/Medaković, Hilandar 124.

510 For an *aer-epitaphios* from Vatopaidi, donation of the emperor John VI Kantakouzenos see, Theocharē, Amphia 420-424 figs 356-357. – For examples from Virgin Perivleptos (Saint Clement), Ochrid see: 1. For an *epitaphios*, donation of Andronikos II Palaeologos: Millet, Broderies religieuses 90. – Rousseva, National Museum of History 139 no. 140. 2. – For a *podea* with Crucifixion: Bojtscheva, Ein Kunstwerk 8-15. – For a general overview on that matter, see Loverdou-Tsigarida, Thessalonique, centre de production 252-253.

511 Xyngopoulos, Tychaia eurēmata 65-66 fig. 5. In a grave in the floor of the rectangular room south of the church's apse. The first fabric was a very fine purple one with interwoven golden motives, the second was thicker fabric also gold-weft with cross-shaped motives, and the third, probably an external one, purple with embroidered golden lamellae creating rows of composite cross-shaped motives and medallions.

512 Matschke, Tuchproduktion 76-79. – Tsamēs, Philotheou erga 556 §108:1-5: »Ἀνήρ τις, Παλάτης τὴν κλήσιν, τὸν τρόπον ἐπιεικής, χρυσοστίκτης τὴν τέχνην, χρυσῷ τὴν καινουργηθεῖσαν ἱερατικὴν στολὴν ἐπεκαλλώπιζε τῷ μεγάλῳ, ὃ δὴ καὶ πρόφασιν ὡσανεὶ τῆς πρὸς ἐκεῖνον ἐπιδημίας καὶ τῆς μελλούσης εὐεργεσίας ὁ μέγας πεποιημένος, αὐτόκλητος ἐφίσταται τῷ οἴκῳ ἐκείνου σύν γε τοῖς ὁμοτέχνοις ἐργαζομένου·« [A good man, Palatēs by name and a gold-embroiderer by profession, was decorating the renovated prelatic vestment of the saint with gold, which was like a pretext for the saint's visit and future benefaction, as he (the saint) went self-invited to Palatēs' house, where he was working with his fellow-craftsmen]. The Saint went to the house of gold-embroider Palatēs where he was working with his co-workers renewing saint's prelatical vestment with gold, and there he miraculously cured Palatēs' young son. The supposed miracle can be placed sometime between the summer of 1355 and November of 1359, Tsamēs, Philotheou erga 553. – For a thorough overview of the prelatical vestments represented in monumental paintings, see Gerstel, Beholding 25-29.

513 Book of Eparch 41-43 chap. 10. – Book of Eparch, Koder 110-112.

514 Matschke, Commerce 777. – Dölger, Aus den Schatzkammern no. 111, published also in Actes d'Iviron III no. 78 ln. 30-31. – For a contrary opinion on the existence of guilds in the Palaeologan period and in other than Constantinople cities, see Maniatis, The Domain of Private Guilds in the Byzantine Economy passim and esp. 359, where is assumed that exarchos (ἔξαρχος) »was probably the prolocutor of a group of trades who had formed an informal association or was a local government inspector«. On *myrepsoi*, see Koukoules, Eustathiou laographika 400, with reference to the prohibition to Christians to hand over to *myrepsoi* parchments of the Holy Bible for destruction, according to the 68th canon of the Council in Troullos, and more generally on their profession in 417-418. – On cosmetics and perfumes in Antiquity, see Forbes, Studies in Ancient Technology, vol. 3, 1-50. – Also, Koukoules, Vios kai politismos, B1, 205-207, where all ancient and medieval Greek references on this profession are gathered. – For an overview in English, see Kazdahn, Perfumes and Unguents 1627-1628. – For an overview in the context of professionals in Late Byzantine Constantinople where *myrepsoi* are mentioned to be scattered in different parts of the city, see Oikonomidès, Hommes d'affaires 102, 111, 114-122. – For Thessalonian *archontes* and their involvement in trade and crafts see Necipoğlu, The Aristocracy in Late Byzantine Thessalonike passim and esp. 147-151, and Necipoğlu, Byzantium between the Ottomans and the Latins 80-82.

515 Miklosich/Müller, Acta et diplomata, vol. 2, 526-527 no. 664, a patriarchal confirmation of the pact of *emphyteusis*. The agreement can be dated before 1396, the year of Archbishop Isidoros Glavas' death, who had signed the original contract, according to the noted patriarchal confirmation. – Also, Matschke, The Late Byzantine Urban Economy 482 nt. 75, where it is referred as Miklosich/Müller, Acta et diplomata, vol. 2, 516, no. 666.

516 Kugéas, Notizbuch 148-149. – Laiou, The Agrarian Economy 352. The *archōn* was situated in Constantinople.

were copied and illuminated in the city by several copyists working in different scriptoria[517]. Scholars involved in writing and copying books were Dēmētrios Triklinios (Thessaloniki 1280-c. 1340)[518], Iōannēs Pediasimos Pothos[519], Thōmas Magistros (early fourteenth century)[520], Iōannēs Katrarēs and Iōannēs Asrtapas of the well-known family of painters[521]. It has been also suggested that in the middle of the fourteenth century there existed a scriptorium for legal texts in the city, which was possibly established by Armenopoulos himself[522]. In addition, charts or maps were drawn in the city, presumably requiring the skills of experienced cartographers[523].

Generally speaking, there was a considerable growth in the copying of religious manuscripts intended for the libraries of major Macedonian monasteries; as well as for smaller monasteries in Thessaloniki, to which manuscripts were donated by rich, pious patrons[524]. Thessaloniki in the late thirteenth century was an important centre of book reproduction, producing copies of religious and secular works to order for Constantinopolitan scholars, such as Nikēphoros Choumnos, Nikēphoros Grēgoras and Geōrgios Kyprios. Kyprios even ordered a copy of the works of Plato from Iōannēs Kavasilas, a well-known manuscript copyist in Thessaloniki[525]. Theodōros Hagiopetritēs is perhaps the most well-known scribe and miniaturist of religious manuscripts, with signed works from 1277 to 1308[526]. His daughter Eirēnē[527], the monk Theodosius and Leo also worked in his studio[528]. Theodosios, as it appears, was also a miniaturist, and so we should also include him among the painters of Thessaloniki[529]. Hagiopetritēs co-operated with two other, anonymous artists who executed miniature portraits of the evangelists in the gospels of Göttingen (1290)[530] and the Pantokratōr Monastery Cod. 47 (1301-1302)[531].

In addition to Thessaloniki's Christian scribes, a Jewish scribe called Adoniyah, son of Abba Kalomiti, was active in 1329. Another Jew, from Toledo, called »The Spaniard«, was in the city between 1401 and 1404, and is known to have copied a manuscript in 1403[532].

A different and otherwise more difficult to detect use of parchments is found in sorcery. Here the evidence is indirectly preserved in the late-thirteenth-century speech of Iōannēs Stavrakios on the miracles of Saint Dēmētrios. On the miraculous healing of the Eparch Mari(ni)anos, a *derma* (δέρμα), »parchment«, is mentioned on which the names and forms of gods, circles and semicircles were inscribed, which was considered to have the power to heal the Eparch by placing it on his neck[533].

Where scriptoria were present, one can assume that bookbinding was not far away in Late Byzantine Thessaloniki. However, original bindings are seldom preserved. One notable example is the late-fourteenth-century cover of a fourteenth-century manuscript of the Homilies of Isidoros Glavas (Par. gr. 1192). It is decorated with impressed designs and bronze central monograms formed with some form of champlevé and rosette-like corner bolts. The motifs used for its impressed decoration – mainly geometrical and floral, but also including figures of real and mythical animals – are not found among the surviving Constantinopolitan and Cretan examples and might, therefore, indicate the originality of this Thessalonian workshop and point to its own traditions and style[534].

517 For an overview on cultural life and intellectuals in Palaeologan Thessaloniki, see Kyriakoudēs, Klassikistiko pneuma passim. – Malamut, Cinquante ans à Thessalonique 289-294.

518 Kōnstantakopoulou, Vyzantinē Thessalonikē 140. – Katsaros, Grammata kai pneumatikē zōē 327. – One of his books, written by the »best copyist of Thessaloniki«, Iōannēs Astrapas, according to Triklinios himself, is preserved bearing the title, probably not original, »Περὶ τοῦ ἐντὸς τῆς σελήνης ὁρμωμένου μέλανος«, and it appears that he conducted systematic experiments with a large mirror. The same treatise was supplemented with drawings of the surface of the moon on which light-coloured was the reflection of the land areas and black the reflection of the seas, executed by Astrapas, offering another indication of the maps and other illustrative elements a Thessalonian codex could include. For the treatise, see Wasserstein, An Unpublished Treatise 153-174. – On Astrapas, see Kissas, Solunska umetnička porodica Astrapa 37-39.

519 Kōnstantakopoulou, Vyzantinē Thessalonikē 141 nt. 2.

520 Katsaros, Grammata kai pneumatikē zōē 326.

521 Kyriakoudēs, Klassikistiko pneuma 233, with thorough bibliography.

522 Medvedev, Ypērche stē Thessalonikē ena ergastērio 215, 219.

523 As it can be suggested by the case of Maximos Planoudēs (1260-1310) who was known to possess a *geōgraphicon pinakion* (γεωγραφικὸν πινάκιον), a map of the city, the most hospitable among the cities of the Roman Empire, which he consulted in order to understand the favourable site where the city was founded, in respect to the winds, the ground and the sea, and the direction of the north winds. Planudis, Epistulae, 110, ep. 136:60-66. »πολλοί μὲν οὖν φασί μοι τὴν Θεσσαλίας μητρόπολιν ἀμείνω πάσης τῆς Ῥωμαίων ἀρχῆς ἔπηλυν ἄνδραν δέξασθαι καὶ πρὸς ὑγείαν μετακοσμῆσαι καὶ μηκέτ' αὐτῷ συγχωρεῖν εἶναι τὸν βίον ἀβίωτον. καὶ γὰρ καὶ ἀέρων εὖ ἔχειν καὶ γῆς καὶ θαλάττης ἐν ἀρίστῳ ἱδρύσθαι· καὶ μέντοι καὶ βορρᾶν καὶ ἄρκτους ἀσπάζεσθαι πόρρωθεν, ὡς πού μοι καὶ τὸ γεωγραφικὸν ὑφηγεῖται πινάκιον« [many people tell me that the metropolis of Thessaly is the finest city in the entire Roman state as regards receiving a man coming from abroad, to restore his health and not allow his life to become unlivable. For it has good air, and was founded on the best of land and sea. And indeed, (they say) that it embraces the north from afar, as my geographical table informs me]. – Kōnstantakopoulou, Vyzantinē Thessalonikē 175, 208.

524 Katsaros, Grammata kai pneumatikē zōē 328.

525 Kōnstantinidēs, Aparches pneumatikēs akmēs 141, 147-148. – Kyriakoudēs, Klassikistiko pneuma 225. – Eustratiades, Grēgoriou tou Kypriou epistolai 5-48. – Kountoura-Galanakē, Iōannēs Staurakios 383-384, on several letters of Patriarch Gregory of Cyprus (1283-1989) to his old friend Iōannēs Staurakios, Metropolitan Chartophylax of Thessaloniki, which are preserved. Staurakios intermediated for the copying of the Constantinopolitan manuscript with Plato's works that Gregory shipped to him, and whose copying was much delayed and badly executed, probably by Kavasilas.

526 Lamberz, Nea Stoicheia 85-106.

527 Nelson, Theodore Hagiopetrites 79, 122-123.

528 Nelson, Theodore Hagiopetrites 86-94, 114-115, 117, 124.

529 Illuminations of the Evangelists Mark, Luke and John of the Gospel gr. I,20 (Biblioteca Marciana, dated to 1302) rendered in the voluminous style are ascribed to him, see Nelson, Theodore Hagiopetrites 112-115.

530 Nelson, Theodore Hagiopetrites 101-105 pl. 56-59.

531 Pelekanidēs et al., Thēsauroi Agiou Orous 128-133, 263-265.

532 Jacoby, Foreigners and the Urban Economy 124.

533 Iōakeim Ivēritou, Iōannou Staurakiou logos 340:32-35: »μεμβράνη δὲ ἦν […] ὀνόματα θεῶν καὶ κύκλων περιγραφαὶ καὶ ἡμικύκλια καὶ σχημάτων χαρακτῆρες παντοδαπῶν καὶ εἰδώλων τύποι ὑπερφυεῖς τῇ μεβράνῃ κεχάρακται.« [and there was a parchment (…) names of gods and shapes of circles and semicircles and shapes of all kinds and forms of very large idols were inscribed on the parchment]. On Staurakios see, Kountoura-Galanakē, Iōannēs Staurakios passim. – Kaltsogiannē/Kotzampassē/Paraskeuopoulou, Ē Thessalonikē stē Vyzantinē logotechnia 144-146.

534 Astruc, Isidore de Thessalonique 261-272 esp. 267-272. – On bookbinding in northern Greece and Mount Athos in Palaeologan period, see Irigoin, Un groupe de reliure 273-285. I wish to thank Dr D. Keller of the Altertumswissenschaften Bibliothek, Basel University, for providing me with copies of these two articles. – Also, see Cat. Paris 1992, 471 no. 363 (P. Hoffmann).



a



b

Fig. 58 Gold-embroidered *aer-epitaphios*, c. 1300: **a** complete. – **b** detail with the Communion.

c



d



Fig. 58 (continued) Gold-embroidered *aer-epitaphios*, c. 1300: **c** detail with the Christ-amnos. – **d** underside of the detail with the Christ-amnos.



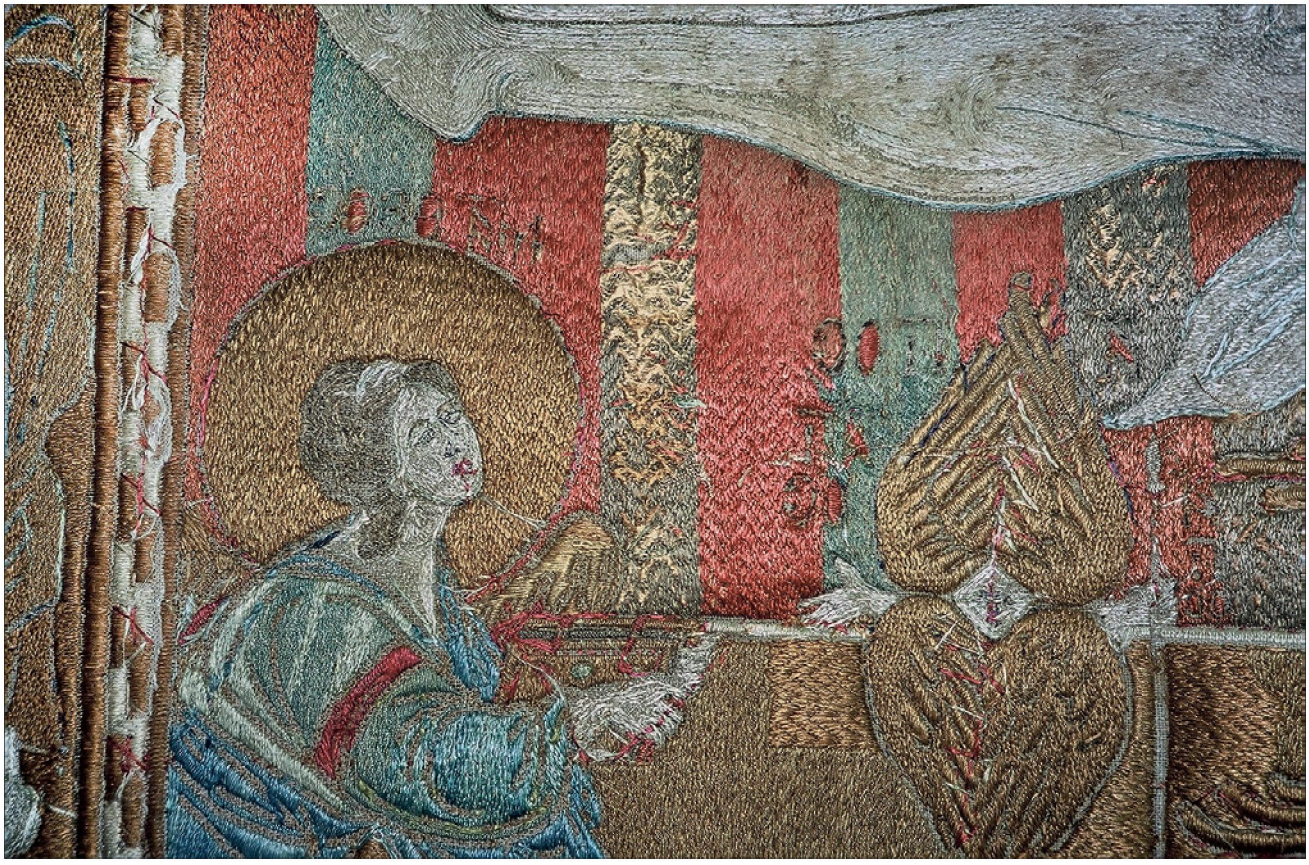
e



f

Fig. 58 (continued) Gold-embroidered *aer-epitaphios*, c. 1300: **e** detail from the Communion of the Bread. – **f** underside of the detail from the Communion of the Bread.

g



h



Fig. 58 (continued) Gold-embroidered *aer-epitaphios*, c. 1300: **g** underside of the detail with Mathew and a Cherub. – **h** detail with Mathew and a Cherub.



i

Fig. 58 (continued) Gold-embroidered *aer-epitaphios*, c. 1300: **i** detail of an inscription.

Conclusion

The *banausos, douleutēs, cheirōnax, cheiromachos* (βάναυσος, δουλευτής, χειρῶναξ, χειρομάχος), or experienced *cheirotechnarios* (χειροτεχνάριος) and *polytechnos maïstōr* (πολύτεχνος μαΐστωρ), men involved in manual labour and, to an extent, commerce as well, were held in low regard by the ancient Greeks and Romans, as these types of activities were considered inappropriate for free citizens and were exercised with the intermediation of slaves and freedmen[535]. In Late Antique times, in larger cities, a new production model emerged. Apart from the few large state workshops, production moved from the well-known model of Antiquity of large operations worked by slaves under the ownership of rich civilians, to smaller units owned by the workers themselves in pursuit of their own livelihood[536]. As smaller urban centres gradually declined during Late Antiquity, so did too the standard of living of artisans. It has also been assumed that since artisans were dependant on large landowners, when many of the latter moved to their properties in the countryside, the artisans followed them. This shifting of the artisans and increased role of the countryside led to a deterioration in the quality of products and tools that were being produced, compared to the higher technological standards of urban production in Antiquity[537]. This situation was openly expressed in an Imperial law of 400, referring to the lost splendour of the cities and the migration of craftsmen, *collegiati*, semi-servile guildsmen, to the countryside[538].

Little is known specifically about the economic and social status of craftsmen in Roman society. Generally speaking, the social status of Roman workers and craftsmen and artisans was low, regardless of the fact that they constituted a populous and often thriving group in the city, and it seems that they belonged to the lower social classes. This perception was based on the prejudices of the landed aristocracy who believed that working with one's hands was undignified. Rather than credit the craftsmen who produced the work, society honoured the patrons. It appears that these ideas continued into the Christian period, notwithstanding the disapproval of the Christian Church Fathers. Another reference to the low social esteem of the artisans and to the way in which their fellow citizens dealt with them in the late fourth century is found in a homily of Saint John Chrysostom (397-404) in which he reproves those who treat cratsmen like slaves. He specifically named shoemakers, dyers, coppersmiths, tent makers, wood-cutters and beaters, which must have been the lowest social groups of artisans[539]. According to the ecclesiastical historian Evagrius (mid-sixth century), craftsmen belonged to the lower classes of the city's society[540]. Furthermore, the livelihood of the workers, the *banausoi* (βάναυσοι), which comprised the largest part of Rome's population, was made on a day-to-day basis, as was mentioned explicitly by Procopius (mid-sixth century)[541]. Just like the ancient Greeks and Romans before them, these attitudes led the Byzantines to consider the market traders and manual labourers to belong to humble and brutal occupations[542]. Such views kept the aristocracy from taking up trades of this type and they were instead exercised by the middle and lower classes of Byzantine society. Some clerics also took up business, despite the fact that the Church had forbidden several professions, both noble ones, such as medicine, or less noble ones, such as barkeeping (κάπηλος)[543].

According to the social dictates of the time, the majority of professions were exercised by men, although women could also be professionally active. In theory, women should not

535 On Roman craftsmen in general, see Morel, The Craftsman 214-44. – On a thorough presentation of written and archaeological information on all artisanal trades in the Late Antique world, see Sodini, L'artisanat urbain à l'époque paléochrétienne 71-119.

536 Loungēs, Ēkoinōnia 92, with further bibliography.

537 Loungēs, Ēkoinōnia 92-93.

538 The Law of Honorius proclaimed to Vicentius, the Praetorian Prefect of Gaul, by which he recalls forcibly those civic collegiates charged with the maintenance of urban infrastructure who had escaped their minsteria for the countryside. CTh, XII, 19, 1: »*Destitutae ministeriis civitates splendorem, quo pridie nituerant, amiserunt: plurimi siquidem collegiati cultum urbium deserentes agrestem vitam secuti in sécréta sese et devia contulerunt*« [»Destitute of the splendour of the civil ministries, from which yesterday they were shining, they [the cities] decline: since very many members of the guilds abandoning the urban care are pursuing the peasant's life and they gather themselves in hidden and secluded [places]«. See also Lenski, Servi Publici 354.

539 Ioannis Chrysostomi, Homiliae 20 col. 168.

540 Evagrius, Historia Ecclesiastica 6.7 p. 226. »τὸ πᾶν τῆς πόλεως κεφάλαιον ἐς τὴν Ἀστερίου μοῖραν ἀπεκρίθη, προσέλαβε δὲ, καὶ εἴ τι δημῶδες ἦν καὶ τὰς τέχνας τῇ πόλει συνεπλήρου« [the higher ranks of the city sided with Asterios, and were supported by the populace, and by those who were engaged in trades]. Translation into English based on Evagrius Scholasticus, Ecclesiastical History (431-594 AD), translated by E. Walford (1846) 291.

541 Procopius, De Bellis 5.25.11. »καὶ τοῦ δήμου τὸ πλεῖστον μέρος πενίᾳ τε πιεζομένους καὶ τῶν ἀναγκαίων σπανίζοντας, ἅτε γὰρ βαναύσοις ἀνθρώποις ἐφήμερά τε ἅπαντα ἔχουσι καὶ ἀργεῖν διὰ τὴν πολιορκίαν ἠναγκασμένοις πόρος οὐδεὶς τῶν ἐπιτηδείων ἐγίνετο.« [and the largest part of the citizens (of Rome) were pressed by poverty and necessary things were scarce, because the artisans earn all these for each day and since they were forced, due to the siege, to not work they were not creating any income from their trade].

542 For Byzantine texts referring to this topic, see Koukoules, Vios kai politismos, B2, 221-223, 229-231. – For the social status of the artisans in Middle and Late Byzantine society, see Oikonomidès, Hommes d'affaires passim and esp. 114-123.

543 Koukoules, Eustathiou laographika 399.

be exposed to men's sight. Several references from different periods are preserved that prove that they were engaged in commerce; some rather successfully. Furthermore, other references mention that they were also engaged in other artisanal as well[544].

During the ninth century, it appears that the social perception regarding the relatively low status of artisans temporarily improved. The ascendancy of Alexios I Komnenos (1081-1118), a member of the landed aristocracy, to the throne brought this to an end and ushered in a new period of depreciation that lasted until the end of the Empire. In addition, peasants increasingly engaged in arts and crafts, mainly as occasional potters and blacksmiths, from the eleventh century to the end of Byzantine Empire[545]. However, during the late twelfth, thirteenth and fourteenth centuries the number of artisans increased and they appear to be better incorporated into political and social life, occupying a middle place in society. These were the *mesoi* (μέσοι)[546] and *mesē moira* (μέση μοίρα)[547], who enriched themselves by their trade, *epistēmē* (ἐπιστήμη)[548]. Of course, there was a differentiation among them as well, and minor craftsmen, workmen and peasants were considered to be part of the *dēmos* (δῆμος)[549]. The social acceptance and rise of the *mesoi* in the fourteenth and fifteenth centuries appears to be connected with the fact that increasing numbers of the aristocracy were engaging in commercial activity, apparently due to the loss of large tracts of their lands to foreign enemies, leaving them deprived of important revenues, which they were obliged to recover with the potential profits of their commercial activities[550].

Thessaloniki, initially as the capital of part of Macedonia and from 148 BC of the entire province, underwent a great economic and commercial flourishing. The economic potential of this Mediterranean port attracted foreigners to settle here, such as Italian merchants (*negotiatores*) and Jews. Many kinds of trades and professions were needed to meet the needs of the constantly growing city. Builders, stoneworkers, mural painters and mosaicists were in constant demand in and around the city.

As is only natural in a populous city of the size of Thessaloniki, a large number of workshops operated throughout the city and its vicinity, e. g. metalworkers, armourers, brick and tile makers, potters, glassworkers, jewellers, bone carvers, drapers, textile dyers (including purple dyers), tanners, carpenters and mat and basket weavers. They mostly built makeshift structures or re-used older buildings. It also seems that both necropolises were used for the workshops of marbleworkers, clay-lamp makers and glassworkers, while in the area to the west of the city several potters as well as brick and tile makers established workshops. In the city, workshops were found in even the most central and well-constructed *insulae*, co-existing with the private dwellings of the wealthy. However, workshops were mainly located near the city walls, especially on the western side, while open public spaces that had lost their original function during the Late Roman period, such as the Ancient Agora, were occupied by diverse workers who adopted them according to their needs and thus gradually began to shape the medieval profile of the city.

Several Middle Byzantine commercial and artisanal activities are revealed in the historical sources, as for instance in Kaminiates' *On the Capture of Thessalonica*, where he refers to the central role of the city's main street, the *Leōphoros*, describing large crowds of both locals and visitors gathering there to buy the many commodities on offer. The goods that are mentioned as being on sale cover several trades, such as wool and silk weaving, jewellery (creations of gold and silver embellished with precious stones are cited), glassworking and metallurgy (products of copper, iron, pewter and lead are noted).

Although there is no direct reference to the local production of these commodities it is probable that most of them were produced in Thessaloniki and that only a few were imported. In the *Timariōn* many merchants are described as importing wares, mainly textiles, from distant areas of the then known world to Thessaloniki, to sell at the fair of Saint Dēmētrios. His description, along with what is known about the trade of wares from Thessaly in the city – or even from Slavic and Bulgarian areas during the ninth and tenth centuries – offer additional arguments for the fact that the Empire's second most important city and port continued to function in the Middle Byzantine era as a centre of regional, inter-regional and »international« trade[551]. In addition, the constant presence of foreign traders in the city is well-attested.

Eustathios of Thessalonica, at the end of the twelfth century, commented on the low income of various trades, such as weavers, who worked for a few copper coins, and tailors, coppersmiths, tent makers and leatherworkers who worked

544 On references in Byzantine texts concerning the economic activity of women, see Koukoules, Vios kai politismos, B1, 232-235, and Laiou, Women in the Marketplace 261-273.

545 Laiou/Morrisson, The Byzantine Economy 111-112, with bibliography.

546 Oikonomidès, Hommes d'affaires 116. – Eustazio, La espugnazione 32:8.: »πλωίζονται εἰς ἐκεῖνον οἱ μεγάλοι, οἱ μικροὶ, οἱ μέσοι« [Sail there large and small and middle (size traders)].

547 Oikonomidès, Hommes d'affaires 117.

548 Ševčenko, Alexios Makrembolites 207: »ἢ γὰρ ἐξ ἐπιστήμης ἐπλούτησέ τις ἢ ἐξ ἐμπορίας, ἄλλοι δ' ἐξ ἐγκρατείας« [Because if someone became rich from its trade or from commerce, but others from their self-restrainment].

549 Oikonomidès, Hommes d'affaires 118.

550 Oikonomidès, Hommes d'affaires 120-122. – Necipoğlu, Byzantium between the Ottomans and the Latins 41-43.

551 Oikonomidès, Le kommerkion 241-248. – Laiou/Morrisson, The Byzantine Economy 81-82.

for the equivalent of a morsel of bread[552]. In addition, a quotation that illuminates the hardships of the craftsman's life is given by the same Thessalonian prelate (c. 1178-1195/1196). Eustathios reproaches those monks who do not live spiritually like true monks, despite wearing rags, but continue to deal with worldly matters and with what is profitable for them, toiling like any hard-working craftsman[553].

Overall, on the basis of archaeological finds and textual references, it can be stated that metalsmiths (both private and in the state armoury), stone and marbleworkers, mural painters, mosaicists, potters, glassworkers, weavers, textile dyers, tanners, furriers, carpenters, basket makers, candle makers and copyists were all active in the city. Finally, activities traceable through excavation, have been located in several parts of the city: near the sea walls; in the centre of the city on the *Via Regia*; in residential quarters; and also in the immediate proximity of large churches. Outside the city walls, on the flat coastal areas east and west of the city diachronically, potters and mainly brick and tile makers operated.

Generally speaking, during the second half of the thirteenth century and in the early fourteenth century, Thessaloniki was a thriving city, functioning as a major marketplace. The city was in a bouyant financial situation, being an important station in the Venetian commercial trade subsystem consisting of western Greece and the western Balkans. In consequence, its inhabitants saw an improvement in their social conditions. Church fairs played an important part in the commercial life of the city in this period; as did foreign merchants – mainly Venetians, but also Pisans, Genoeses and Ragusians – to such an extent that they had their own market, primarily for textiles, but for other commodities as well. It is also probable that many trades were organised in guilds, e. g. saltern workers, furriers, milliners, perfumers, marbleworkers, builders and other artisans as well, such as painters, whose art went beyond the boundaries of the city and into the wider area of the Balkans. Potters were also very active and quite successful since their products are found in distant Mediterranean harbours. Glassworkers, metalworkers, weavers and gold-embroiders were also active members of the city's trade. Copyists of classical, religious and legal texts also operated within the culturally and intellectually favourable climate of Palaeologan Thessaloniki.

We see a downturn in Thessaloniki's economy from the middle of the fourteenth century until the capture of the city by the Ottomans in 1430. The city had become cut-off from its hinterland and was deprived both of its agricultural products and of the income that the city's middle and upper classes had formerly derived from their estates. It was with this income that they had financed local trade and artisanal production. Due to the almost constant blockade of the city, the inflow of merchants and other traders had diminished, restricting both the import and export of goods, and leading to a further decline in the city's production levels.

Archaeological and historical research demonstrates that a wide array of artisans, e. g. millers, lime kilners, potters, glassworkers, stoneworkers and sculptors, mosaicists, metalsmiths, jewellers, painters, wood carvers, basket weavers, bone carvers, tanners, furriers, weavers, dyers, gold-embroiderers, candle makers and scribes, were, more or less, constantly active throughout the Roman and Byzantine periods in Thessaloniki. The professional character of these artisans remains unclear and the present research cannot answer the question whether they were exclusively artisans or rather partly farmers, agricultural workers and artisans. There is no archaeological indication for the presence of anything other than an intermediate level of artisanal activity in the city, i. e. the production of items for sale by the artisan himself or someone close to him, family or household member, or an employee, intended for the local or restricted regional market[554]. Sources do mention the existence of a mercantile export market reaching beyond local or regional distribution and into remoter areas and markets.

Artisanal installations consisted of small, makeshift constructions, operating mainly in converted older buildings or the ruins of monumental constructions. In these spaces, temporarily, and – according to the archaeological finds – probably fully aware of the temporary character of their enterprise, artisans of the city operated, occasionally sharing their premises, or working in parallel with other similar trades. Workshops owned by the Church and other *archontes* (elites) of the city were probably better built and situated more carefully within the city's fabric, but their actual location and distribution remains obscure. Apart from the area of the field west of the city where several potteries and many brick and tile makers operated, no special concentrations of workshops have been detected, either within or without the walls. Generally, workshops tended to be established in vacant areas in the centre or were scattered in commercial districts of the city, particularly on the outskirts, near the city walls, or outside them, in the area of the extended city's cemeteries or even farther afield. In many cases it can be established that they were *ergastēria*, having the dual role of workshop and

552 Eustathius, Opuscula 223.17-21: »Ἢ γάρ οὐκ οἴδαμεν ἄνδρας, τοὺς μὲν ἱστὸν ὑφαίνοντας ὀλίγου τιμώμενον, καὶ μόγις δι' ἡμέρας ἀποφερομένους κέρδος τοῦ καμάτου νούμμους εὐαριθμήτους, τούς δὲ ἱμάτια ράπτοντας, ἢ χαλκὸν κατακροτοῦντας, ἢ σκηνὰς καταρτύοντας, ἑτέρους δὲ σκευωροῦντας παντοῖα δέρματα, καὶ ἄλλους ὀχλοῦντας τὴν θάλασσαν ἐπὶ ὀλιγίστοις ἁλφίτοις« [Moreover, do we not know men, some of whom weave sailcloth for a small price, whose exhaustion after a full day (of work) yields a profit of but a few coins, and others who sew garments, or work with copper, or make tents, and others who make every sort of leather, and others who suffer the sea's tyranny for a morsel of bread?].

553 Eustathius, Opuscula 245, 93-96: »Τεχνίτου βαναύσου δίκην κοπιᾷς, ὃς ἐν τοῖς ἀγενέσιν ἔργοις, δι' ὧν ρυπαίνεται ἢ κατατρίβεται τὸ καλὸν ἄμφιον, ρακενδυτεῖ καὶ οὕτω κερδαλεώτερον τὴν τέχνην διαχειρίζεται« [toiling like any hard-working craftsman who wears rags in his hard physical labour, which gets new clothes dirty and tears them, and thus renders his craft more profitable].

554 As described by Dagron, The Urban Economy 395, citing Max Weber's differentiation of systems of artisanal activity, see Weber, Wirtschaftsgeschichte 110f.

retail premises, for they were situated on main streets and had their openings onto them.

During all these centuries, the populous city, thriving port and commercial hub that was Thessaloniki met its needs predominantly through local artisanal production of all sorts and at least some of the needs of its neighbours through export. Unfortunately, the low esteem in which such activities were held has largely kept them out of the written sources and centuries of constant habitation prevent us from gaining a more vivid and precise picture of this multifaceted aspect of the economic and social life of the Roman *mētropolis* and Byzantine *symvasileusa*. We are left with fragmentary and obscure salvage excavations and indirect references in the written source. The entire corpus of this archaeological, literary and epigraphical evidence has been collected and presented for the first time in this volume, providing a clear picture of the constant presence of craftsmen, devoted to a great array of different activities, and the important role they played in the daily life of the city throughout its 2,300-year history.

Catalogue of the Archaeologically Attested Workshops

Introduction

A catalogue is included here in order to make available all the information gathered in the preparation of the main text of this work. This encompasses only those structures or finds considered to be »workshops« by their excavators. Grids of water pipes or other indications for such activity that could not be confirmed due to the salvage or rescue character of the excavations have not been included.

A special comment should be made on the nature of the archaeological work conducted in Thessaloniki. All excavations that take place in the city – apart from the research in the Galerius complex, the surviving part of the city walls and the still standing monuments – have a fragmentary character and are considered salvage or rescue excavations. They are conducted in a single private plot where a new building is due to be built. In order to get building permission the area to be built upon must be excavated and archaeologically investigated. Modern properties generally do not correspond to ancient or medieval ones and consequently antique buildings are almost always excavated only partially, and often their exact size, function and reconstruction phases remain obscure. This uncertainty might last forever or until the adjoining property is demolished and another rescue excavation is conducted to reveal the remainder of the building, possibly several years or even decades later. The summary reports that are presented in the *Archaiologikon Deltion*, in the *Archaiologiko Ergo stē Makedonia kai Thrakē* from 1987, and in the small catalogues published by the 9th Ephorate of Byzantine Antiquities from 1999 to 2005, are the only information published on these complex, often obscure, but overall extremely important finds.

The 112 sites or rather different activities that were recorded have been arranged according to their nature (**supplement**). Therefore, all sites where indications of the use of open fire were detected, mainly kilns or wasters (production refuse), are presented in the following order (**cat. nos 1-67**, maps in **figs 379-382**, marked in red):

1. Lime kilns
2. Ceramic workshops according to their different products, which were usually produced in different sites, namely, the production of bricks and roof tiles; and those of vessels, lamps and figurines.
3. Metal production workshops
4. Glass workshops
5. Workshops of undetermined use that involved fire

The second group of workshops that follow in the catalogue are those that involved the use of water and therefore interconnected systems of water reservoirs and water pipes are always traceable and characterise these sites. This group comprises the following categories (**cat. nos 68-100**, maps in **figs 383-385**, marked in blue):

1. Water mills
2. Wine presses
3. Metal refineries
4. Dyeworks
5. Tanneries
6. Workshops of undetermined use that involved water.

Finally, a group of less »eloquent« finds, i.e. those of activities that are more difficult to determine, but which have been detected nevertheless (**cat. nos 101-112**, map in **fig. 386**, marked in green):

1. Bonecarving workshops
2. Weaving workshop
3. Marble workshops
4. Mosaic workshops
5. Undetermined »workshops«, i.e. those that were described as such by their excavators, but for which no other information was given that would allow their placement in one of the other groups.

CATALOGUE

Lime Kilns

1 **figs 59-62**
Type: Lime kilns
City: Platamōnas
Area: North of the Castle
Address: »Krania« site
Date: Early fourth century
Description: Two large, early fourth-century complexes of kilns found at Platamōnas assumed to be connected with the building activity of Galerius and Constantine I in Thessaloniki. Fifteen cylindrical lime kilns were cut into the soft rock of the hill, which, as it appears, were used at least twice. The diameter of the cylindrical chambers for the production of lime ranges from between 3 m and 4.5 m and its depth in some cases exceeds 5 m. On the floor of the chamber, an

axial, elongated channel was cut, on which a grid-like floor was based, consisting of two or three stone slabs. The vaulted fire-tunnel opened onto the hillside and was divided into two parts. The upper opening was at the level of the chamber's floor and the lower at the level of the dug-out channel. In front of the chamber a stoke-area was cut in the rock used for the collection of combustibles and for the workers to operate in.

Bibliography: Cat. Thessaloniki 2002, 5. – Loverdou-Tsigarida et al., Archaiologikes ereunes 436-459 illus. 1-2 figs 4-5. – Loverdou-Tsigarida, Paragōgikē monada asvestiou 89-183 esp. 101-102. – Sdrolia, Archaiologikes ereunes.



Fig. 59 Platamōnas, »Krania« site, plan of kilns on the cemetery's hill.

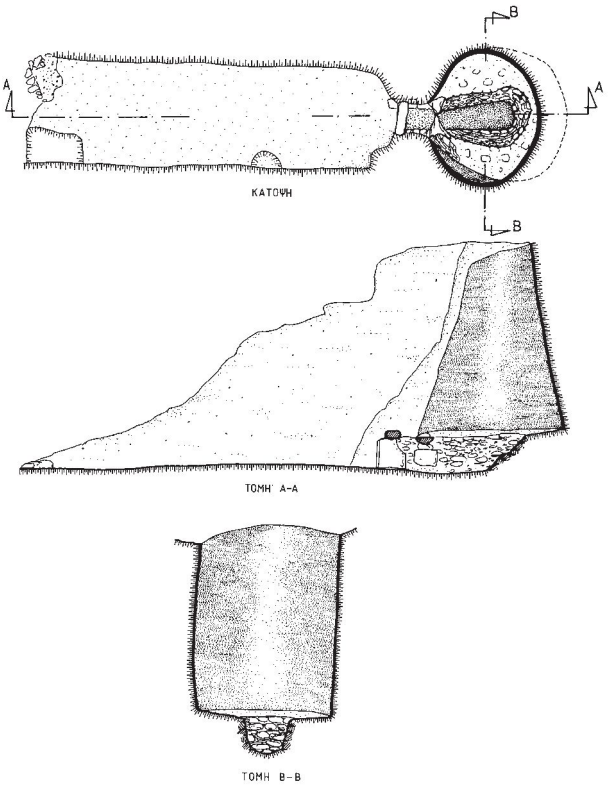


Fig. 60 Platamōnas, »Krania« site, plan of kiln 7.

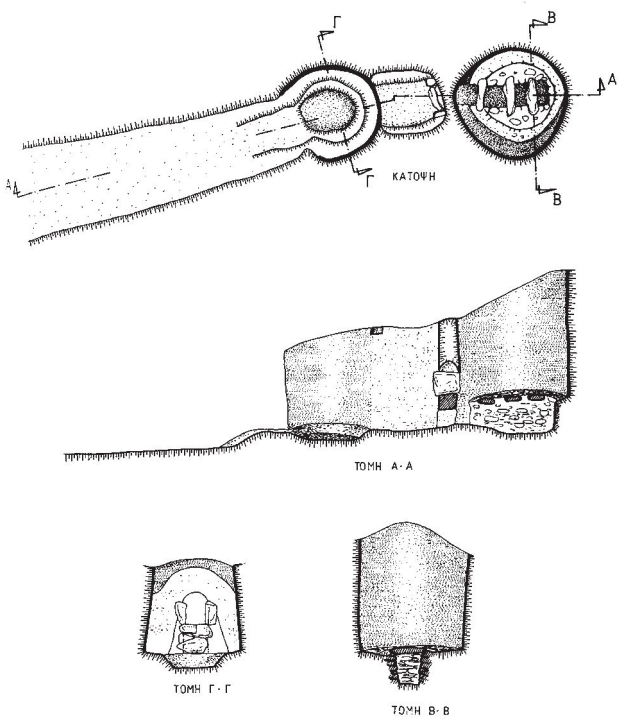


Fig. 61 Platamōnas, »Krania« site, plan of kilns 1 and 2.



Fig. 62 Platamōnas, »Krania« site, kiln 1, firing trench.

2 **figs 63-64**

Type: Lime kiln
City: Thessaloniki
Area: City centre (**map:** 7i)
Address: Ancient Agora
Date: Seventh century
Description: When the Ancient Agora lost its official character, probably sometime in the seventh century, the Odeion was transformed into a rainwater reservoir and the surrounding rooms into workshops. The square room no. 6 north of the scene (no. VIII in fig. 63) was used initially as a workshop for clay and metal vessels. Later the same room was used as a lime kiln – the only Early Christian one found in the city – apparently for burning marble from the ruined monuments of the Forum to make lime.
Bibliography: Velenēs et al., Programma Archaias Agoras 247-256 esp. 251.

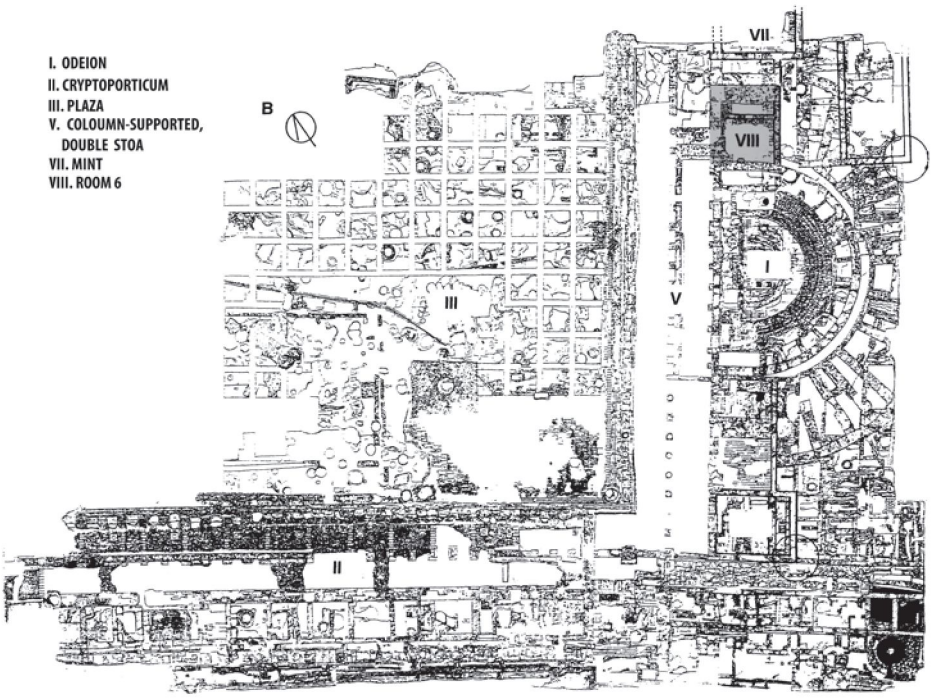


Fig. 63 Ancient Agora, plan. Room 6 highlighted.

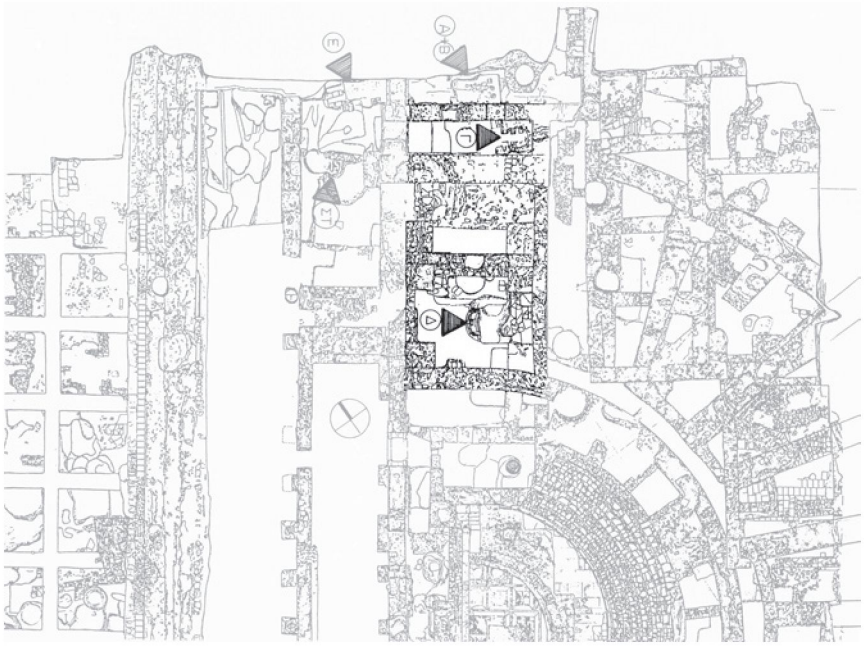


Fig. 64 Ancient Agora, NW corner of the Agora. The area north of the Odeion. Kilns are marked.

3 figs 65-66

Type: Lime kiln
City: Thessaloniki
Area: City centre (**map:** 10j)
Address: 24 Tsimiskē Street, Stoa Hirsch
Date: Tenth to twelfth centuries
Description: Indications of a late Middle Byzantine lime kiln were discovered during the salvage excavation conducted on this site, lying close to the sea wall near the harbour.
Bibliography: Tsimpidou-Avlōnitē/Lykidou, Stoa Hirsch 281-288. – Tsimpidou-Avlōnitē/Lykidou/Euthymoglou, Nea stoicheia.

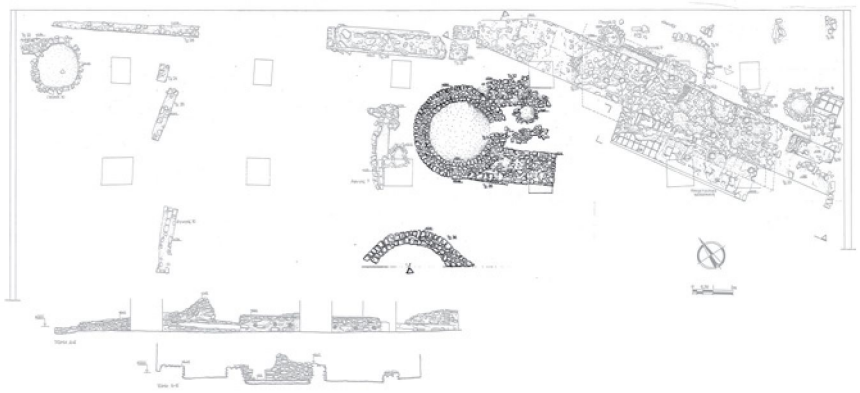


Fig. 65 24 Tsimiskē Street, Stoa Hirsch, plan of the excavation.



Fig. 66 24 Tsimiskē Street, Stoa Hirsch, general view of the workshop.

4 **figs 67-70**

Type: Lime kiln

City: Thessaloniki

Area: City centre (**map:** 9j)

Address: 45 Vasileōs Ērakleiou

Date: Probably thirteenth to fifteenth centuries

Description: Parts of two blocks with luxurious fourth-century buildings that had undergone several changes in the Early Christian period were unearthed during the salvage excavation on this site, lying at the junction of two ancient streets. A sixth-century secondary glass workshop (**cat. no. 64**) was also discovered at the site, along with several water pipes and reservoirs datable to the Byzantine and Ottoman periods. Since the ninth century, the Monastery of Hagia Theodōra to the north of the plot was thriving and it is probable that the plot was part of it. Among the aforementioned finds, two large, dug-out, rectangular lime tanks were excavated, built with bricks connected with lime mortar, partly exploiting walls and the clay-tiled floor of an older construction. They retained a thick layer of lime on their walls. In the area adjacent to the west of the tanks, approximately 3 m × 3 m, an extended layer of shells comprising several sacks of shells was found. In the same area a strongly-built well, or possibly a narrow kiln, about 1 m wide was also found. In the well, a thick layer of shells, sealed with a layer of fill containing Late Byzantine glazed pottery sherds and pottery stilts was found, indicating pottery production in the area and offering a relatively secure *terminus ante quem* for the shell finds. Different species of shells were found (mainly oysters, some cockles and a few pectens) and it was evident that they were subjected to intensive firing which resulted in their calcination. From this it can be assumed that shells were used in Late Byzantine Thessaloniki, at least occasionally, for the production of lime, in a similar way to that which has been identified in Middle Byzantine Butrint, and in Late Roman Berenike, already known since the Bronze Age in the Eastern Mediterranean.

Bibliography: For the excavation, see Akrivopoulou, Vasileōs Ērakleiou 45, 255-262.

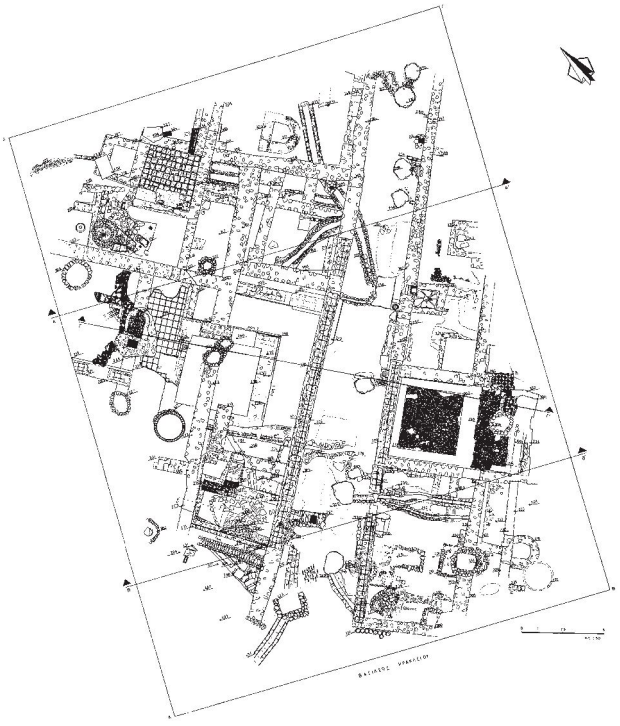


Fig. 67 45 Vasileōs Ērakleiou Street, plan of the excavation.

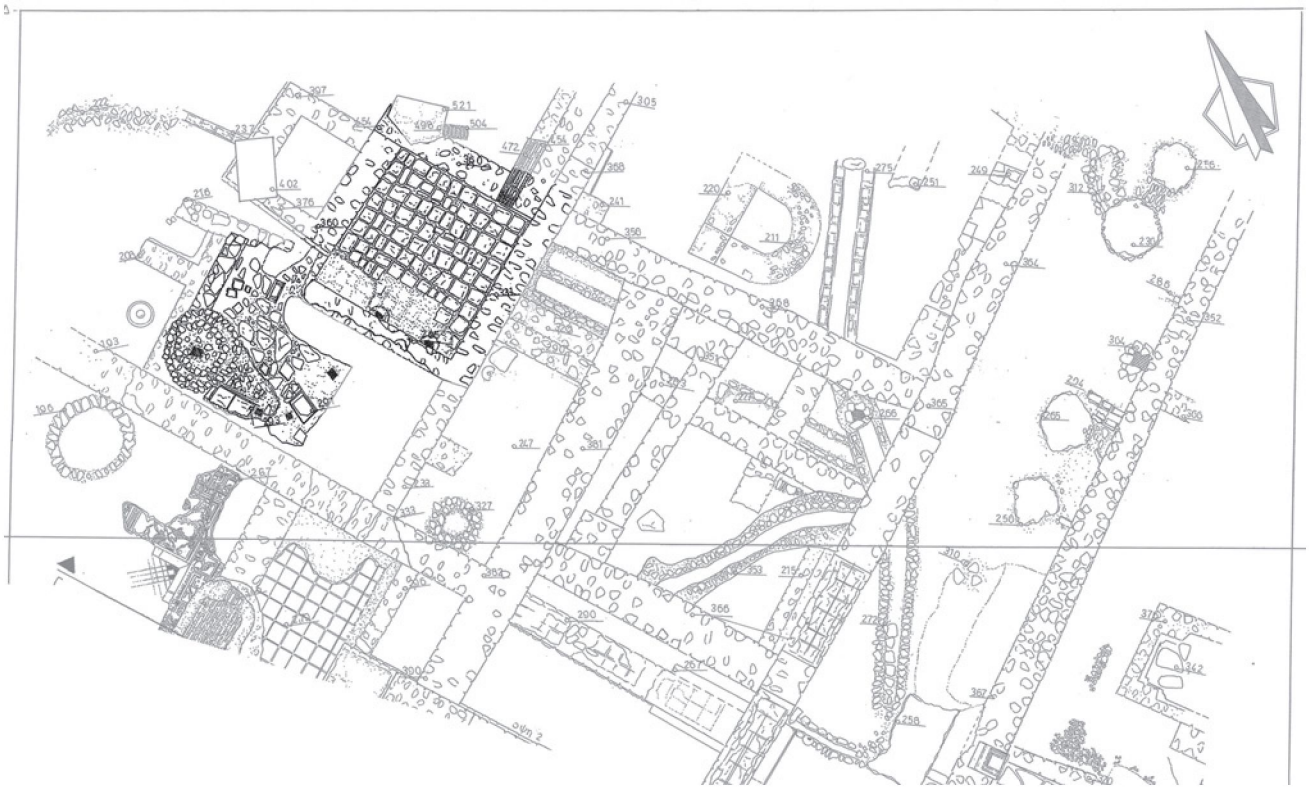


Fig. 68 45 Vasileōs Ērakleiou Street, plan of the lime production area.



Fig. 69 45 Vasileōs Ērakleiou Street, photo of the layer of calcinated shells as found in the well.



Fig. 70 45 Vasileōs Ērakleiou Street, photo of the area with the lime tank and the well that contained a layer of calcinated shells.

5 **figs 71-72**

Type: Ceramic workshop (possibly for bricks and roof tiles)

City: Thessaloniki

Area: Eastern Necropolis (**map:** 9p)

Address: 2 Leōphoros Stratou, Museum of Byzantine Culture plot

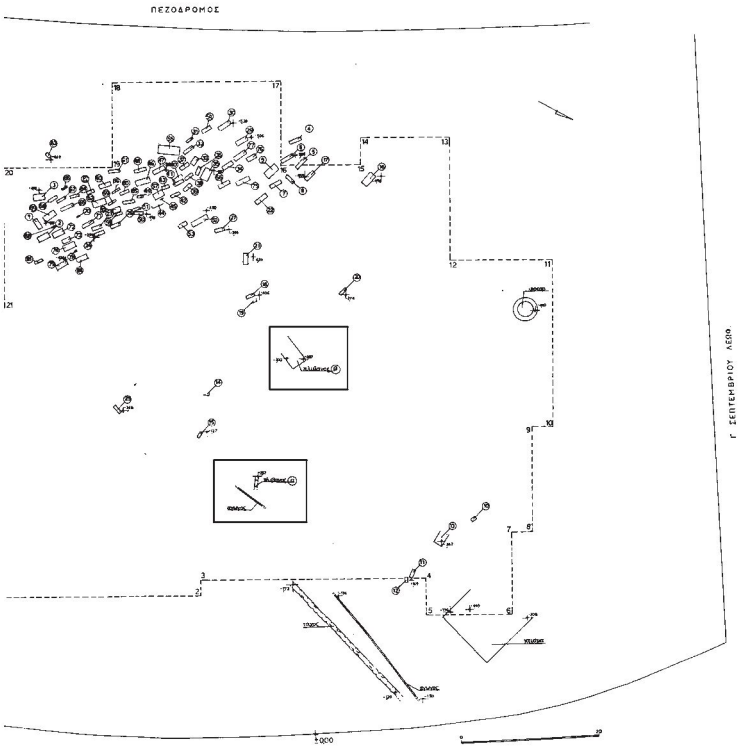
Date: Early Christian period

Description: Two rectangular pottery kilns with a central, elongated post and parallel arcades orientated vertically to the axis of the fire-tunnel, were uncovered among Late Roman tombs. They have been dated to the Early Christian period on the basis of their construction technique, although the depth to which they were cut and built might indicate a much later date.

The first kiln preserves the largest part of its combustion chamber (4.7 m × 2.3 m; max. preserved height 0.65 m), which is dug into the ground and its sides are coated with mud, reinforced with pieces of roof tiles. The combustion chamber is divided into two parts by a brick wall (2 m × 0.45 m), parallel to the mouth of the fire-tunnel. On this wall and on the brick pilasters, which are formed on the external long sides of the chamber, arches were based, bridging the opening of the combustion chamber and supporting the floor of the firing chamber. The niches (0.20 m wide) that were formed between the arches on the side walls and the openings (0.16 m wide) on the central wall facilitated the circulation of air in the combustion chamber. Two pieces of the firing chamber floor were found in the fill of the kiln.

The second kiln is almost totally destroyed. Only part of the south-eastern side of the combustion chamber is preserved (length 1.5 m, preserved height 0.80 m) and four of the pilasters – which were built on the side walls – on which arches supporting the floor of the firing chamber were based.

Bibliography: Nalpantēs, Oikopedo 381. – Nalpantēs, Oikopedo Mouseiou 346.



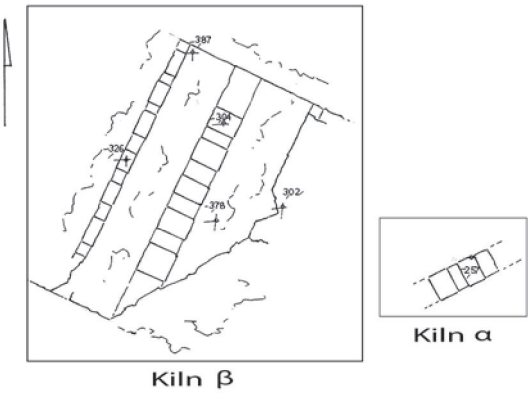


Fig. 72 2 Leōphoros Stratou, Museum of Byzantine Culture plot, detail of the plan with the kilns.

Fig. 71 2 Leōphoros Stratou, Museum of Byzantine Culture plot, plan of the excavation.

6 **figs 73-75**

Type: Ceramic workshop (bricks and roof tiles)

Village: Vasilika

Area: SW of the Grammoustikeia watercourse

Address: Lot no. 127

Date: Early Christian to Late Byzantine or Ottoman period

Description: A semicircular brick-firing kiln built in the late Early Christian period, discovered in the village of Vasilika close to the Grammoustikeia watercourse where Byzantine water mills have also been found. The kiln (2.60 m × 2.96 m) was excavated at the northern part of an excavated field. The partly preserved floor of the firing chamber was supported by four parallel posts built with bricks and placed at intervals of 0.40 m. East of the kiln and adjoining the floor of the firing chamber, the second floor of a firing chamber was discovered, built with vertically placed bricks to form small irregular spaces for the firing of smaller objects. South of the kiln, a floor of hydraulic mortar was uncovered and a water reservoir

to supply the workshop's needs (1.55 m × 2 m). This was connected to a second reservoir that was only traced on the edge of the dig. From pottery sherds found on the site, dating from the Late Roman to the Ottoman period, it is evident that the workshop remained in use, undergoing consequent repairs, from the late Early Christian period until the Late Byzantine and early Ottoman period.

Bibliography: Cat. Thessaloniki 2005, 11.

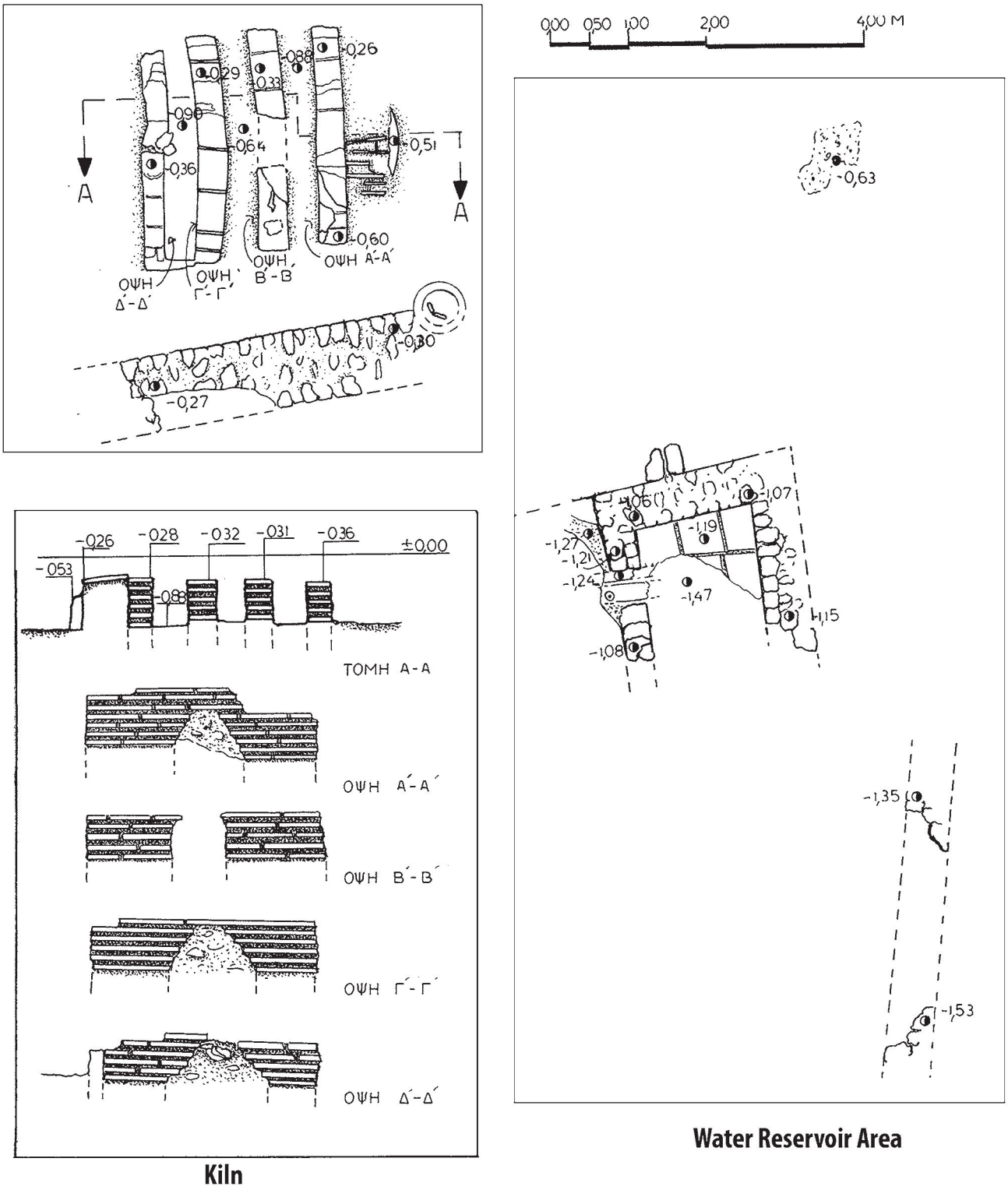


Fig. 73 Vasilika, plot 127, plan of the excavation, and sections of the kiln.



Fig. 74 Vasilika, plot 127, view of the kiln.



Fig. 75 Vasilika, plot 127, part of a workshop's cistern.

7 **figs 76-86**

Type: Ceramic workshop (bricks and roof tiles)

City: Thessaloniki

Area: Eastern Necropolis (**map:** 9n)

Address: 134 Tsimiskē Street, CHANTH/YMCA playing field

Date: Ninth to fifteenth centuries

Description: The site was outside but very close to the eastern city walls, and very close to the sea where a small, protected cove was formed on the shore. Remains of a pottery and brickyard operating in the Byzantine and Ottoman era were excavated, comprising four rectangular kilns, wells and pits for digging out and washing clay.

Kiln I (2.67 m × 3.16 m) was used during the Middle Byzantine period for the production of roof tiles. It is preserved in relatively good condition. The combustion chamber, which was dug in the ground, is intact, with three brick-made arches forming the central corridor of the combustion chamber. Equally well-preserved is the floor of the firing chamber. The above ground firing chamber is only slightly preserved. The brick-made fire-tunnel is placed in the middle of the southern side of the chamber. The most ancient well of the site was located north of the kiln and has been dated to the seventh century.

Kiln II (2.70 m × 2.50 m) was used for the production of roof tiles. A small wall had been constructed at the centre of the combustion chamber to hold three twin-arches and form a double combustion corridor. The kiln had two fire-tunnels.

Kiln III (4.70 m × 3.45 m), here only the lower part of the combustion chamber is preserved. When it stopped being used as a kiln, the floor was paved with bricks and turned into a clay-washing tank.

Kiln IV (5.30 m × 2.20 m) is in a state of relatively good preservation and can be dated to the early Ottoman period. Two fire-tunnels are preserved in the middle of each long side of the kiln.

Several other features were also found at this site: basins dug in the ground with sides made of burned clay, containing ashes from the kilns; a well; and pits for digging out clay in the area of kiln III. A later rectangular building (5.4 m × 3.6 m) with a well attached to it was uncovered; the well had been sunk in a Late Byzantine layer.

Bibliography: Cat. Thessaloniki 2003a, 11. – Bakirtzis, Imports, Exports and Autarchy 108-109.

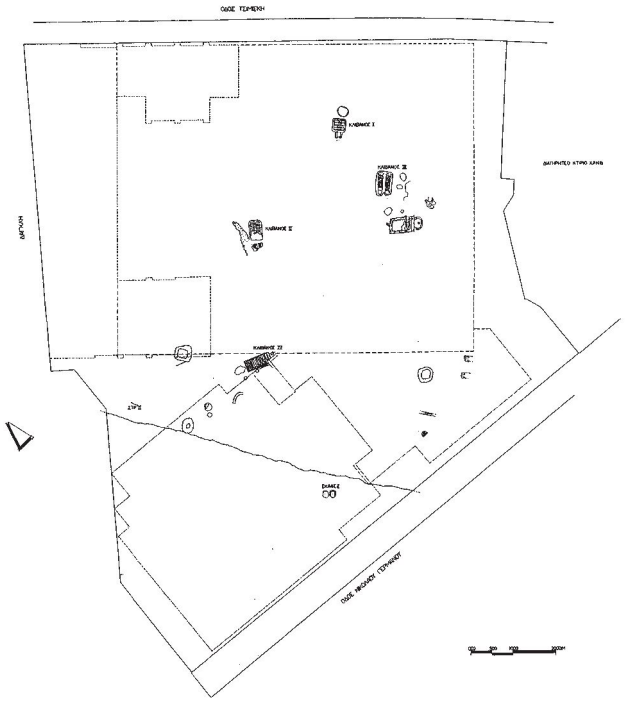


Fig. 76 134 Tsimiskē Street, CHANTH/YMCA playing field, plan of the excavation.



Fig. 77 134 Tsimiskē Street, CHANTH/YMCA playing field, general view of the excavation.



Fig. 78 134 Tsimiskē Street, CHANTH/YMCA playing field, view of kiln I.



Fig. 80 134 Tsimiskē Street, CHANTH/YMCA playing field, view of kiln II.

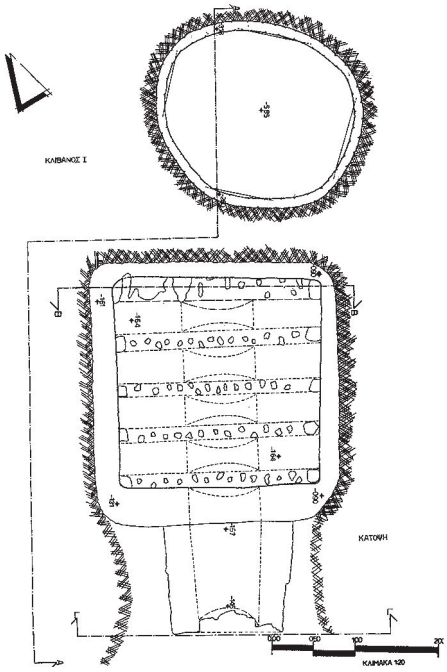


Fig. 79 134 Tsimiskē Street, CHANTH/YMCA playing field, plan of kiln I.

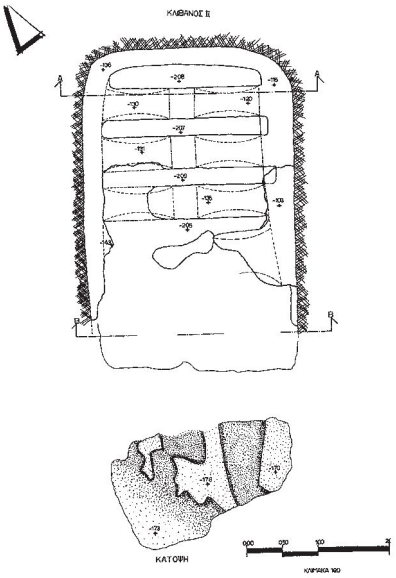


Fig. 81 134 Tsimiskē Street, CHANTH/YMCA playing field, plan of kiln II.



Fig. 82 134 Tsimiskē Street, CHANTH/YMCA playing field, view of kiln/reservoir for clay washing III.

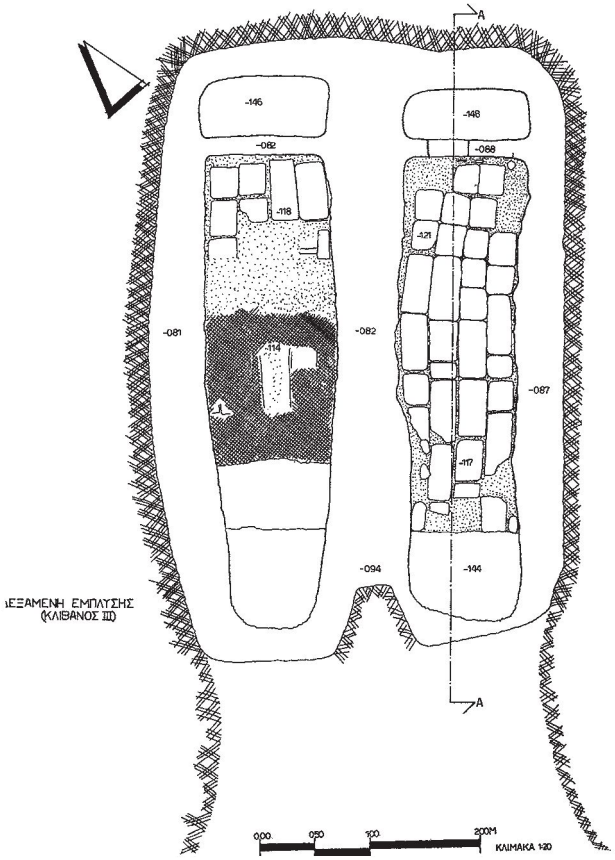


Fig. 83 134 Tsimiskē Street, CHANTH/YMCA playing field, plan of kiln/reservoir for clay washing III.



Fig. 84 134 Tsimiskē Street, CHANTH/YMCA playing field, view of kiln IV.

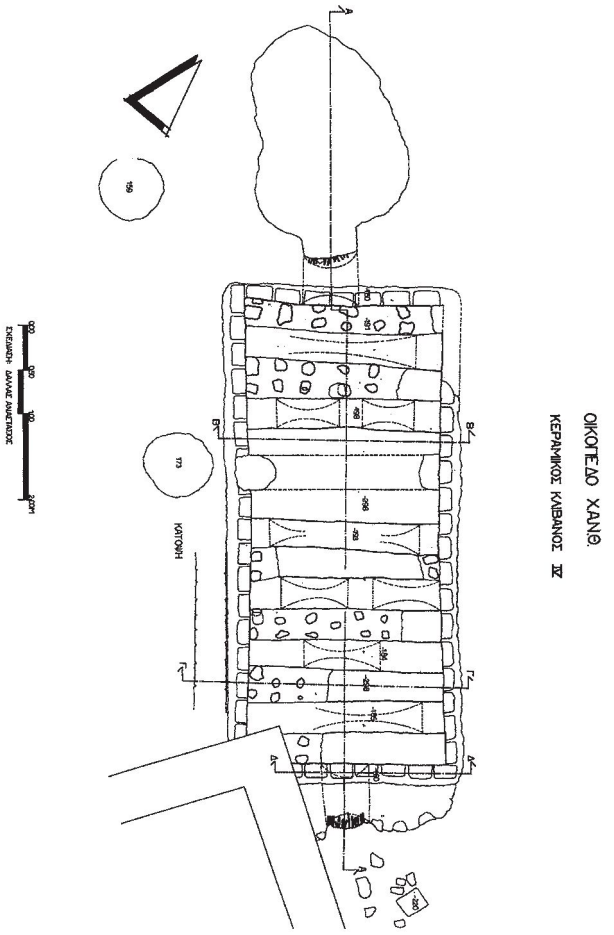


Fig. 85 134 Tsimiskē Street, CHANTH/YMCA playing field, plan of kiln IV.



Fig. 86 134 Tsimiskē Street, CHANTH/YMCA playing field, kiln I, potteries and kilns for firing building materials.

8 figs 87-90

Type: Ceramic workshop (bricks and roof tiles)
City: Thessaloniki
Area: Western Necropolis (**map:** 9c)
Address: G. Kolōniarē, Galanakē and V. Papathanasiou Street
Date: Early Christian
Description: Two rectangular kilns for the production of bricks and tiles at the south-western side of the site, discovered above a stratum of Late Roman (fourth century AD) tombs. The first one is relatively well preserved, while the second is only barely preserved. Of the first kiln (3.80 m × 2.45 m; preserved height 1 m), the rectangular combustion chamber and its bell-shaped fire-tunnel at the southern side of it remain. It is a plain pit dug in the ground, whose sides are not built, but simply coated with mud and reinforced with sherds of roof tiles. The chamber is divided into two parts by a vertical brick wall (length 2 m; width 0.40 m) at the middle of its northern side, and the two compartments communicate only from the fire-tunnel side. At the western side of the chamber three niches (0.33 m deep and 0.27 m wide) open at 0.62 m from the floor. At the eastern side four niches (0.30 m deep and 0.24-0.29 m wide) open at 0.54 m from the floor. The walls between the niches are built with bricks that are radially arranged from a certain height up in order to form the transversal, arcaded structure that supported the floor of the firing chamber. These arcades also seem to have rested on the brick wall of the chamber. Lines of parallel intersecting grooves made by the artisan's fingers are still visible on one place of the coating of the western side of the chamber. Traces of a minimum height of a second kiln (preserved dimensions are 1.30 m × 1.30 m) are preserved over a vaulted tomb. In this kiln the niches stand on the floor of the chamber. The fact that the kilns were found in the same layer as the Early Christian graves leads us to accept the date suggested by the excavator of the site and reject a much later date that has been proposed.
Bibliography: Nalpantēs, Kolōniarē – Galanakē – Papathanasiou 403-406 esp. 405 illus. 9 pl. 226β, dated to the Early Christian period. – For the dating of the workshop in Late Byzantine or Ottoman period see Makropoulou, Taphoi kai taphes 373 nt. 240.

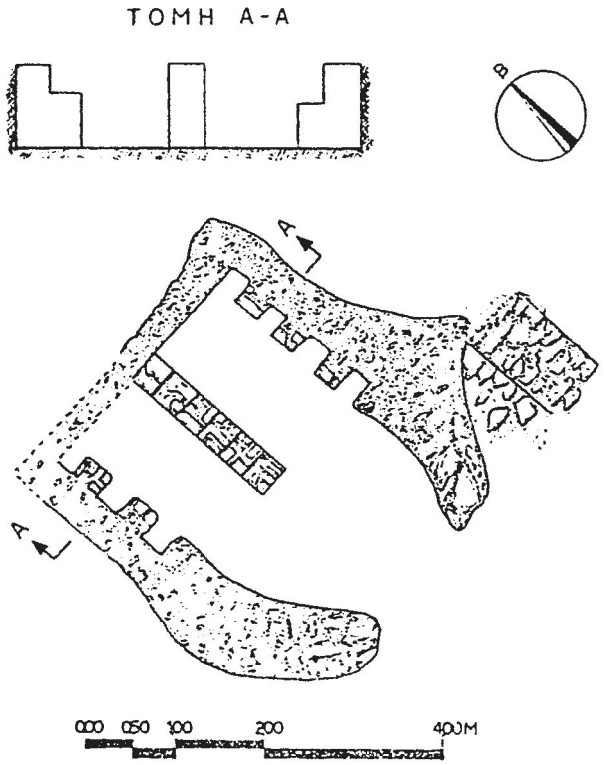


Fig. 87 G. Kolōniarē, Galanakē and V. Papathanasiou Street, plan and section of the kiln.



Fig. 88 G. Kolōniarē, Galanakē and V. Papathanasiou Street, view of the kiln.



Fig. 89 G. Kolōniarē, Galanakē and V. Papathanasiou Street, view of the kiln.

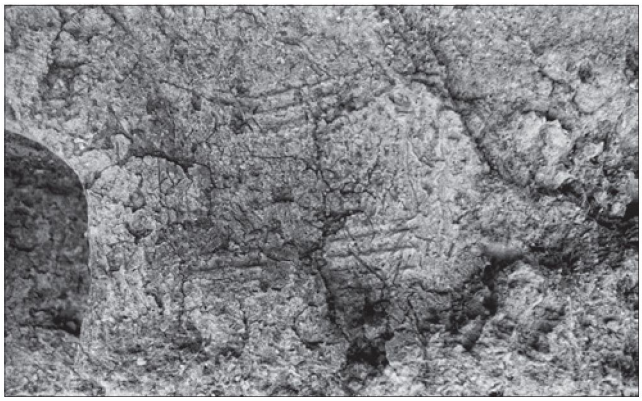


Fig. 90 G. Kolōniarē, Galanakē and V. Papathanasiou Street, detail from the interior of the kiln, fingerprints on the wall coating of the firing chamber.

9 **figs 91-96**

Type: Ceramic workshop (bricks and roof tiles)

City: Thessaloniki

Area: Western Necropolis

Address: 48 Giannitsōn Street (**map:** 11b)

Date: Late Byzantine to Ottoman

Description: Workshop for roof tiles and bricks discovered during the salvage excavation conducted on the plot prior to the construction of a multi-storey building. Two kilns dated to the Byzantine period were unearthed. The kilns are two-storey rectangular constructions with the firing chamber above a combustion chamber. The western one (3.60 m × 2.60 m) is dug 0.30 m deeper than the eastern one (4.35 m × 2.2 m). The floors of the firing chambers are supported by five parallel brick arches, while the fire-tunnels of their stoke-holes are approximately on the level of the firing chamber. No movable finds were found in the kilns and their dating to the Byzantine era is based on the reference in the *Miracles of Saint Dēmētrios* to the site as the *keramēsios kampos* (κεραμήσιος κάμπος, pottery plain). It adjoins those at the 91 and 93 Monastēriou Street plots (**cat. nos 10-11**).

Bibliography: Makropoulou, Giannitsōn 48, 618. – For the dating of the workshop to the Late Byzantine or Ottoman period, see Makropoulou, Taphoi kai taphes 371 nt. 238, and 373 nt. 240. – Markē, Sōstikes anaskaphes 217-218.

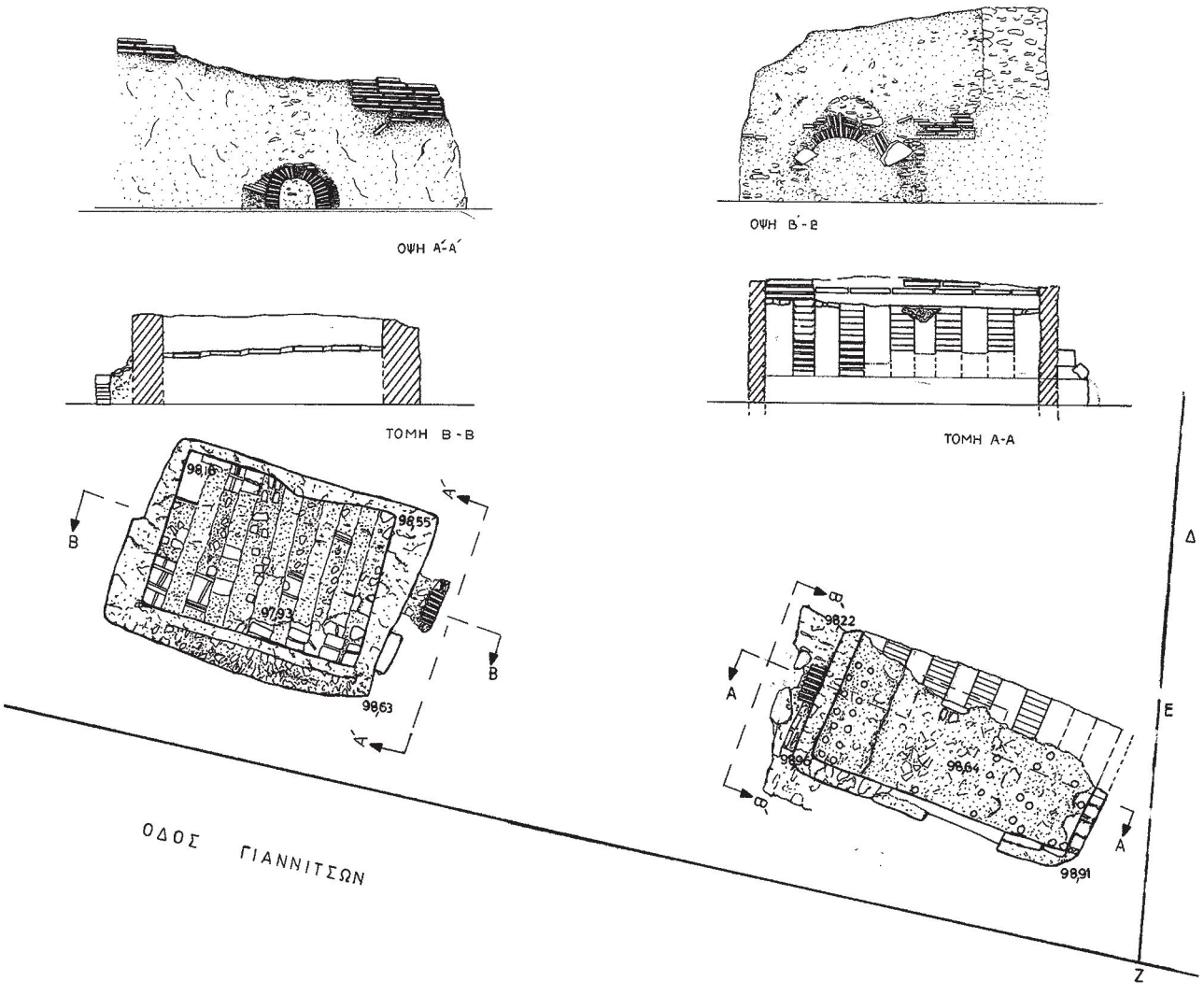


Fig. 91 48 Giannitsōn Street, plan, sections and views of the kilns.



Fig. 92 48 Giannitsōn Street, general view of the excavation.



Fig. 93 48 Giannitsōn Street, eastern kiln 1.



Fig. 94 48 Giannitsōn Street, western kiln 2.



Fig. 95 48 Giannitsōn Street, eastern kiln 1.

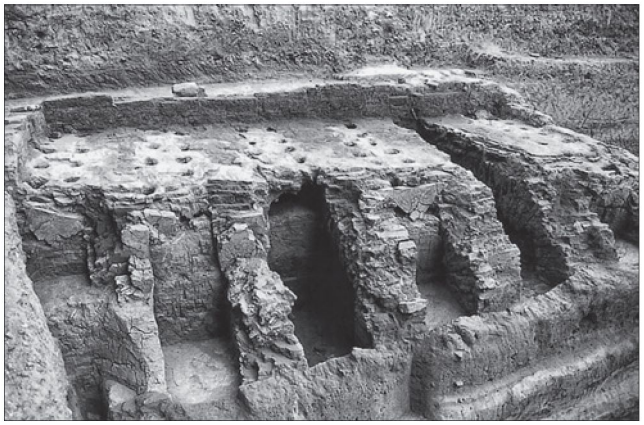


Fig. 96 48 Giannitsōn Street, western kiln 2.

10 **figs 97-98**

Type: Ceramic workshop (bricks and roof tiles)
City: Thessaloniki
Area: Western Necropolis
Address: 91 Monastēriou Street (**map:** 11b)
Date: Thirteenth to fifteenth centuries
Description: Remains of a ceramic workshop were discovered during salvage excavations prior to the construction of a new building. At the north-western part of the plot, two kilns were found that had been used for the production of clay roof tiles and bricks. The workshop probably operated in the fifteenth century and comprised part of the same workshop, of which the other kiln was uncovered to the west in the adjoining plot at 93 Monastēriou Street (**cat. no. 11**). To the south, it neighboured the workshop excavated at 48 Giannitsōn Street (**cat. no. 9**).

Both kilns are rectangular with their long axis orientated north-south. Kiln A has external dimensions of 4.10 m × 2.90 m; and kiln B of 4.20 m × 3.50 m. They are preserved standing a few centimeters higher than the floor of the firing chamber. Five arches supported the floor of the firing chamber in both kilns. The arches of kiln A were 0.90 m wide and those of kiln B ranged from 1.57 m at the southern end, up to 2 m at the northern end. Due to their large size, the northern arches were reinforced with a supporting post in the middle of the opening.

After their destruction, the pits of the kilns were used for discarded wasters from the remaining kilns of the workshop. The excavator accurately believes that these two kilns were abandoned prior to the one that has been excavated at 93 Monastēriou Street (**cat. no. 1**). Remains of fired roof tiles and bricks, parts of unfired roof tiles, some sherds of fifteenth century glazed bowls and a few sherds of large plain vessels, probably from the same period, were collected from the surroundings of the kilns. The better preserved kiln B remains visible and accessible in the basement of the new building.

Bibliography: Makropoulou, Monastēriou 91, 503-504. – For the dating of the workshop to the Late Byzantine or Ottoman period, see Makropoulou, Taphoi kai taphes 371 nt. 238 and 373 nt. 240.

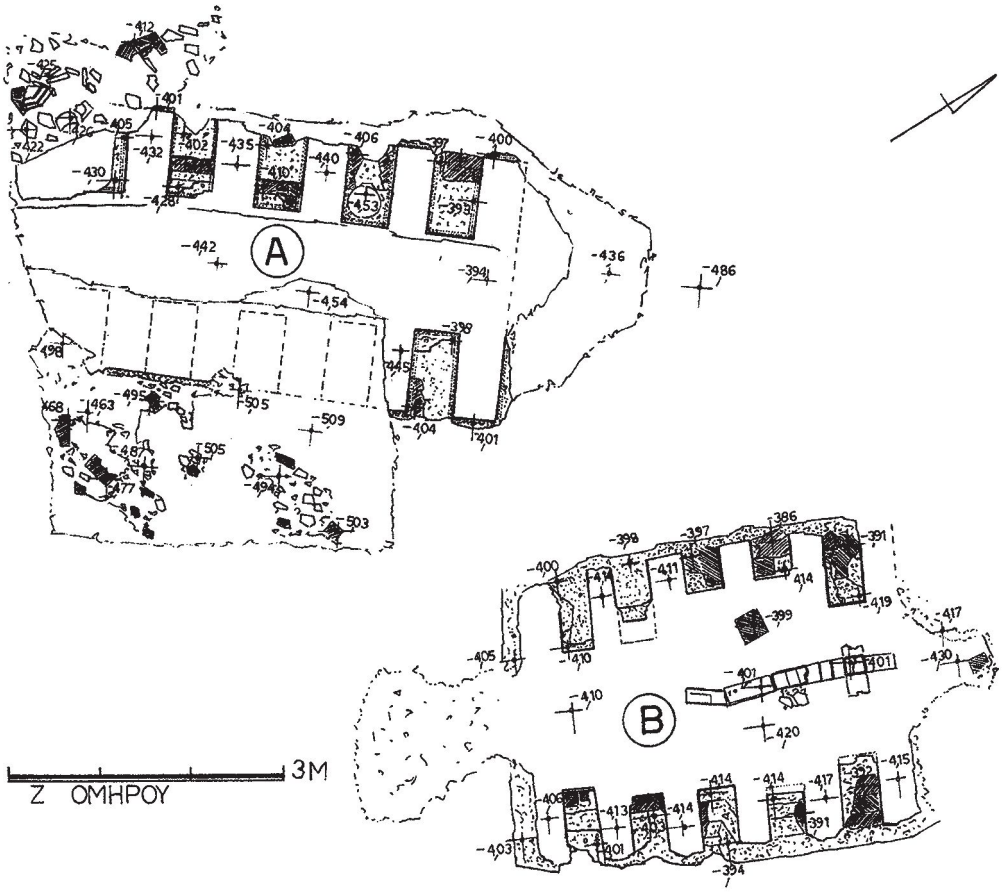


Fig. 97 91 Monastēriou Street, plan of the kilns.

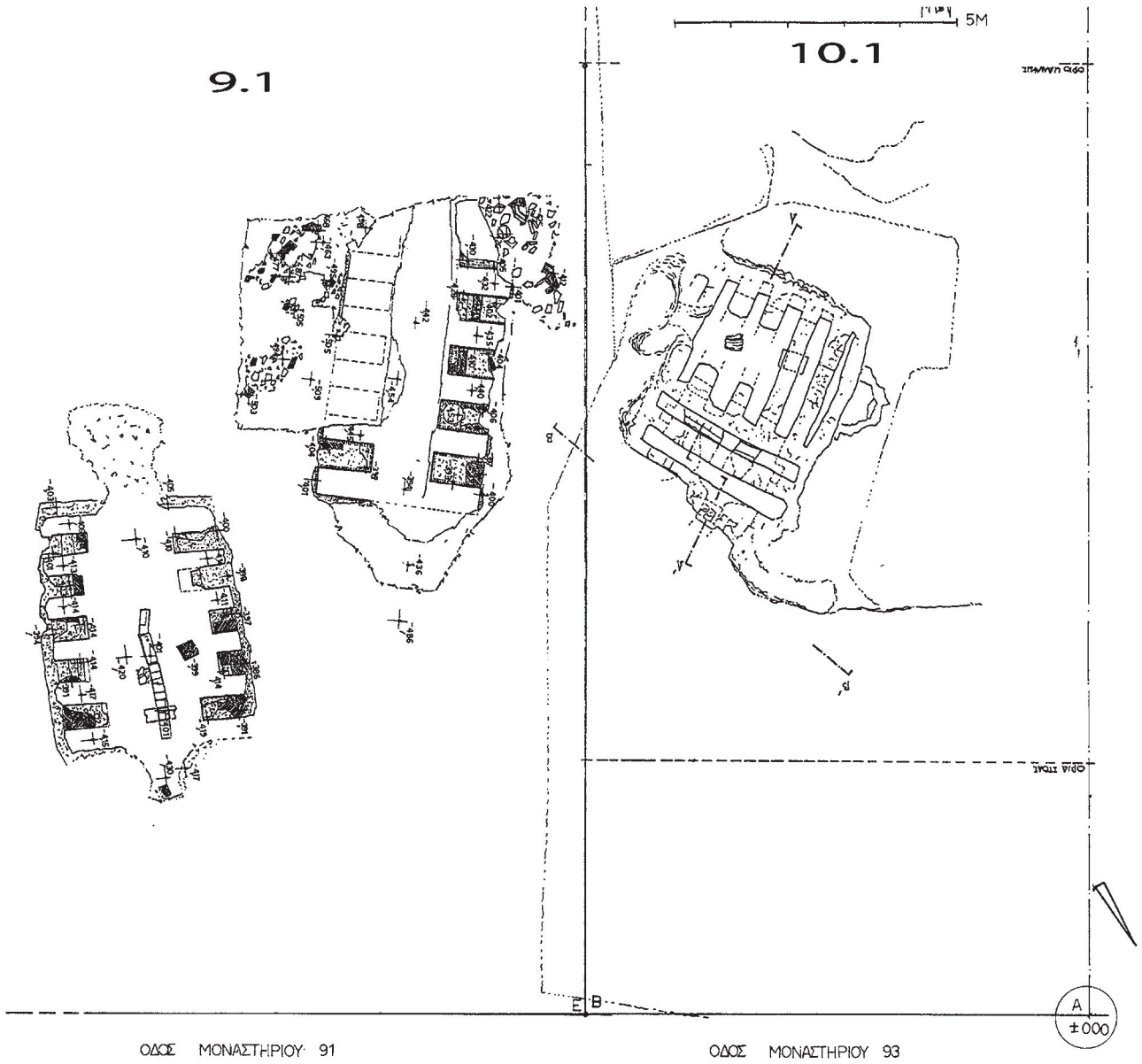


Fig. 98 91 and 93 Monastēriou Street, plan of the plots with the kilns.

11 **figs 99-104**

Type: Ceramic workshop (bricks and roof tiles)

City: Thessaloniki

Area: Western Necropolis (**map:** 11b)

Address: 93 Monastēriou Street

Date: Fifteenth century

Description: Structural remains of a workshop for roof tiles and bricks that had been established in a previously unused, free space on the clay ground of the area. It operated for a long period of time before being abandoned when a nearby seasonal watercourse flooded the area, covering it with a thick layer of gravel that made the further extraction of clay impossible. The kiln (3 m × 3 m) is a two-storey rectangular construction. The floor of the firing chamber was supported by parallel brick arcades orientated vertically to the axis of the stoke-hole. The combustion chamber and the supporting brick arches (in plain, closely arranged brickwork) of the floor of the firing chamber are reasonably well-preserved. The floor itself is not preserved because the entire structure sits somewhat lower than its level. This workshop belonged to the same unit with kilns found at 91 Monastēriou Street (**cat. no. 10**) and they were in an adjoining plot with the kilns at 48 Giannitsōn Street (**cat. no. 9**).

Bibliography: Makropoulou, Monastēriou 93, 379-380. – Eleutheriadou et al., Sōstikes anaskaphes Thessalonikēs 274-275 fig. 10. – For the dating of the workshop to the Late Byzantine or Ottoman period, see Makropoulou, Taphoi kai taphes 371 nt. 238 and 373 nt. 240.

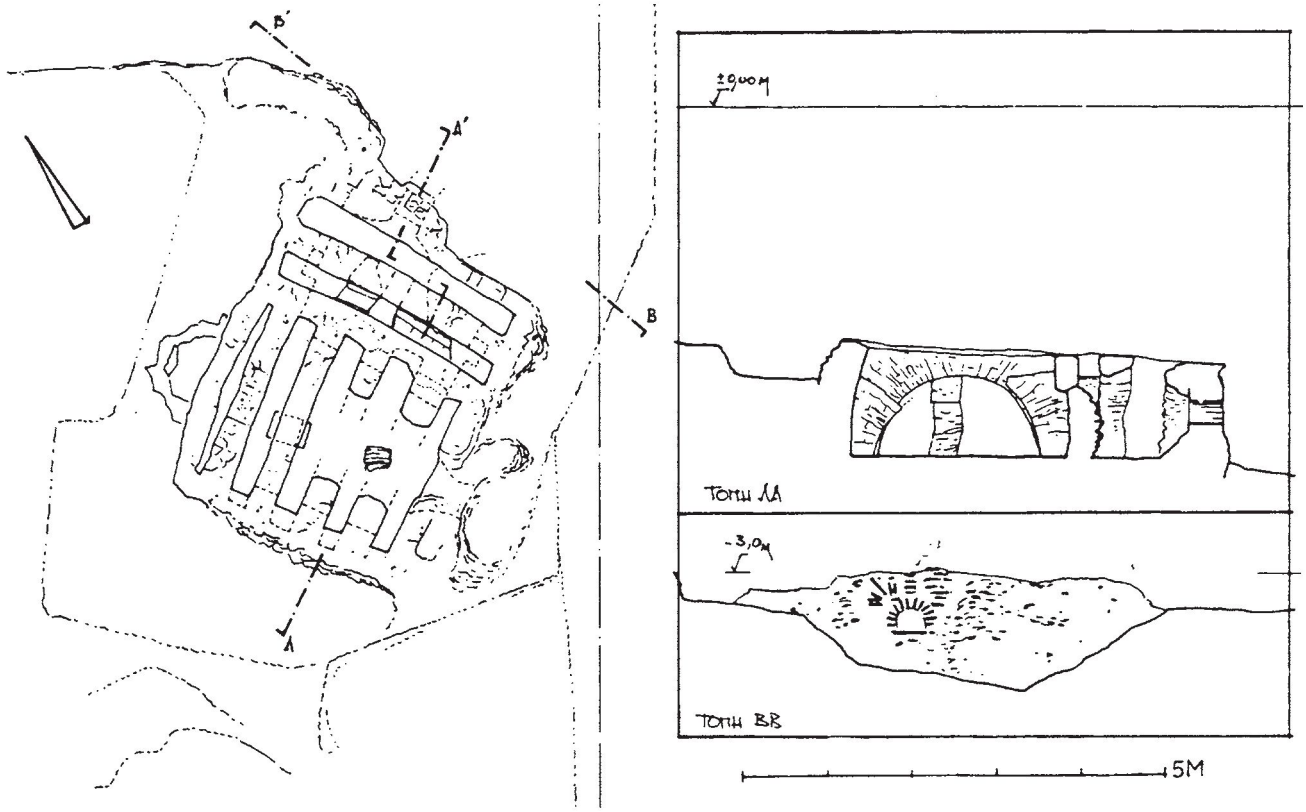


Fig. 99 93 Monastēriou Street, plan and sections of the kiln.



Fig. 100 93 Monastēriou Street, view of the kiln.

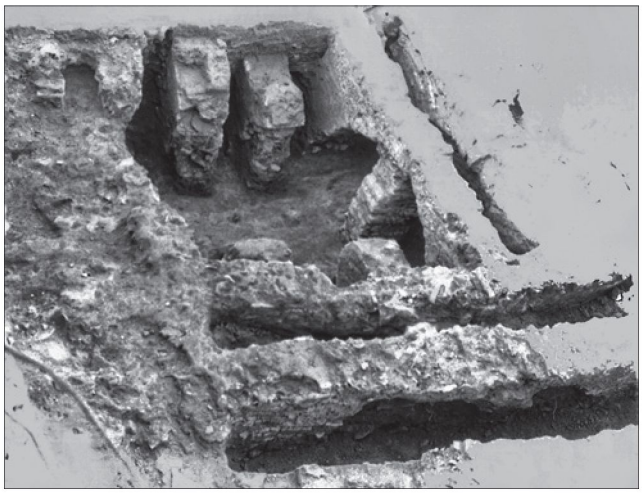


Fig. 101 93 Monastēriou Street, view and details of the kiln.



Fig. 102 93 Monastēriou Street, view and details of the kiln.



Fig. 103 93 Monastēriou Street, view and details of the kiln.



Fig. 104 93 Monastēriou Street, view and details of the kiln.

12 **figs 105-106**

Type: Ceramic workshop (bricks and roof tiles)

City: Thessaloniki

Area: Western Necropolis (**map:** 11c)

Address: Monastēriou Street, in front of the New Railway Station, metro station dig

Date: Some parts Roman, others probably Late Byzantine

Description: Among other finds, several new pottery kilns were unearthed during salvage excavations conducted over an extended area of more than 1,900 m² in front of the New Railway Station, necessitated by the construction of the shaft of the metro station. These had been tentatively dated to the medieval period.

Two rectangular ones and two ellipsoidal kilns were excavated, along with a large (19 m × 8.50 m) refuse pit for the workshops. Parts of roof tiles, deformed masses of burnt clay and masses of clay were found in the pit. Pottery sherds ranging from the Hellenistic to Late Byzantine era along with Roman and Ottoman coins were also found.

Kiln 1 is rectangular (4.90 m × 2.10 m) and orientated NE-SW. The combustion chamber is partly preserved. Its outer walls were made of clay, reinforced in some areas with bricks and roof tiles. Its floor, sloping considerably towards the centre, was also formed with clay and bears the marks of intensive firing. The pit of the stoke-hole is on its NE-side. Coal, ashes, roof tiles and plain sherds were found in it.

Kiln 2, to the east of Kiln 1, is rectangular (6 m × 3.5 m) and orientated NW-SE. It is in a relatively good state of preservation. The outer walls of the combustion chamber are made of clay and on their upper surface bricks and roof tiles are added. Internally, it is divided into seven oblong compartments with six parallel walls built along a NE-SW axis. The floor of the firing chamber is made of clay and preserves three of the originally seven parallel double series of holes. Two arched stoke-holes were found, one on each narrow side, SE and NW. In a second phase of use these openings were reinforced and elongated, with one of them taking on the shape of a funnel-like corridor that partly occupied the stoke-pit. In the pits of both stoke-holes remains of firing – deformed masses of burnt clay and masses of raw clay – were found, along with remains of constructions that were connected with the techniques of using the kiln.

Kilns 3 and 4 are built next to each other, to the north of kiln 2. They are smaller, ellipsoidal ones (diam. c. 1-1.5 m). Their walls were made of clay. Broken pieces of roof tiles were collected from their interior.

The date of the kilns cannot be established precisely because their typology remains identical over a long period of time and the movable finds from them cover a span of time stretching from the Roman to the Ottoman periods.

Two more rectangular kilns, with square supports of the firing chamber, both of them with double stoke-holes one on either short side, were found in the site, dated to the Roman period. In total, six kilns and six water reservoirs along with workshop refuse have been unearthed in an area of 3,800 m².

Bibliography: Acheilara, METRO Thessalonikis 2008, 265-272 esp. 266-267. – Acheilara, METRO Thessalonikēs 2009. – Acheilara, METRO Thessalonikēs 2011.

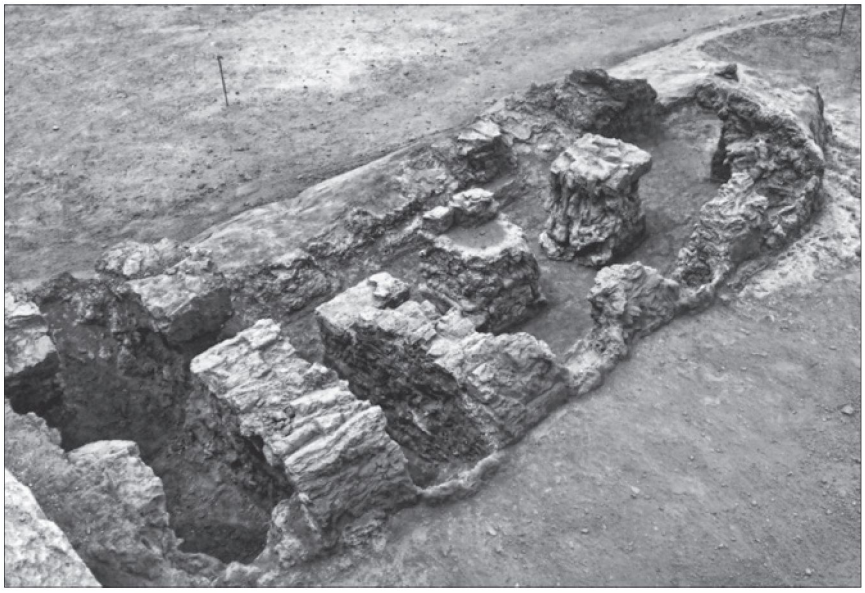


Fig. 105 Monastēriou Street, in front of the New Railway Station, metro station dig, view of kiln 1.

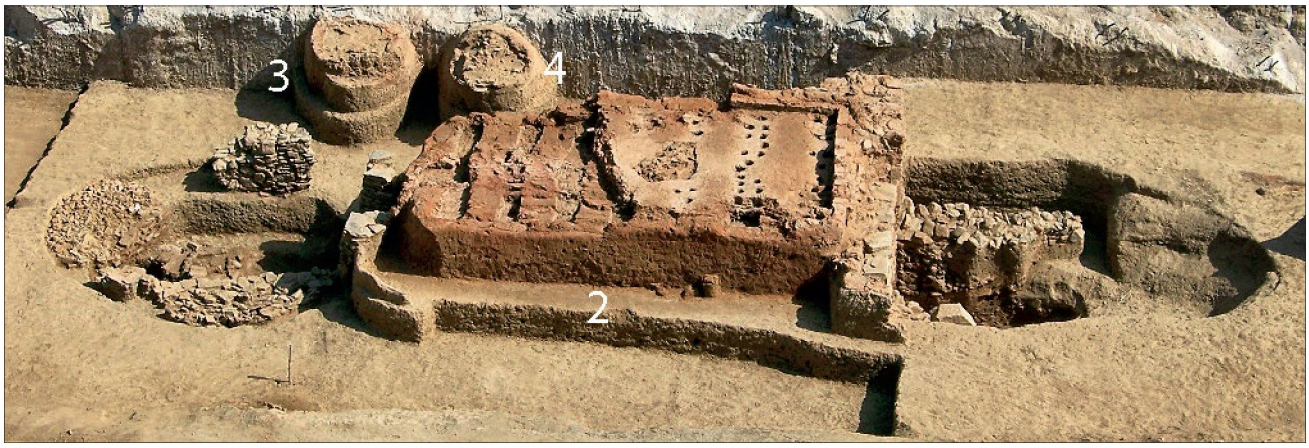


Fig. 106 Monastēriou Street, in front of the New Railway Station, metro station dig, view of kilns 2-4.

13 **fig. 107**

Type: Ceramic workshop (bricks and roof tiles)

City: Thessaloniki

Area: Western Necropolis (**map:** 13a)

Address: Giannitsōn, K. Mazarakē and Kavalas Street

Date: Mid-fifth to early sixth centuries; some possibly Late Byzantine

Description: Five oblong pottery kilns and what may have been a clay-washing basin were discovered during the salvage excavation (2010-2011) conducted over an extended plot covering parts of the Hellenistic and Roman necropolis. The last firing of one of the kilns has been dated, using archaeomagnetism and thermoluminescence, to 475 AD (±54).

Bibliography: Lamprothanasē-Korantzē / Antōniadou, Odos Giannitsōn. – Iōannidēs et al., Chronologēseis romaïkōn klivanōn. – Raptis, Brick and Tile Producing Workshops.

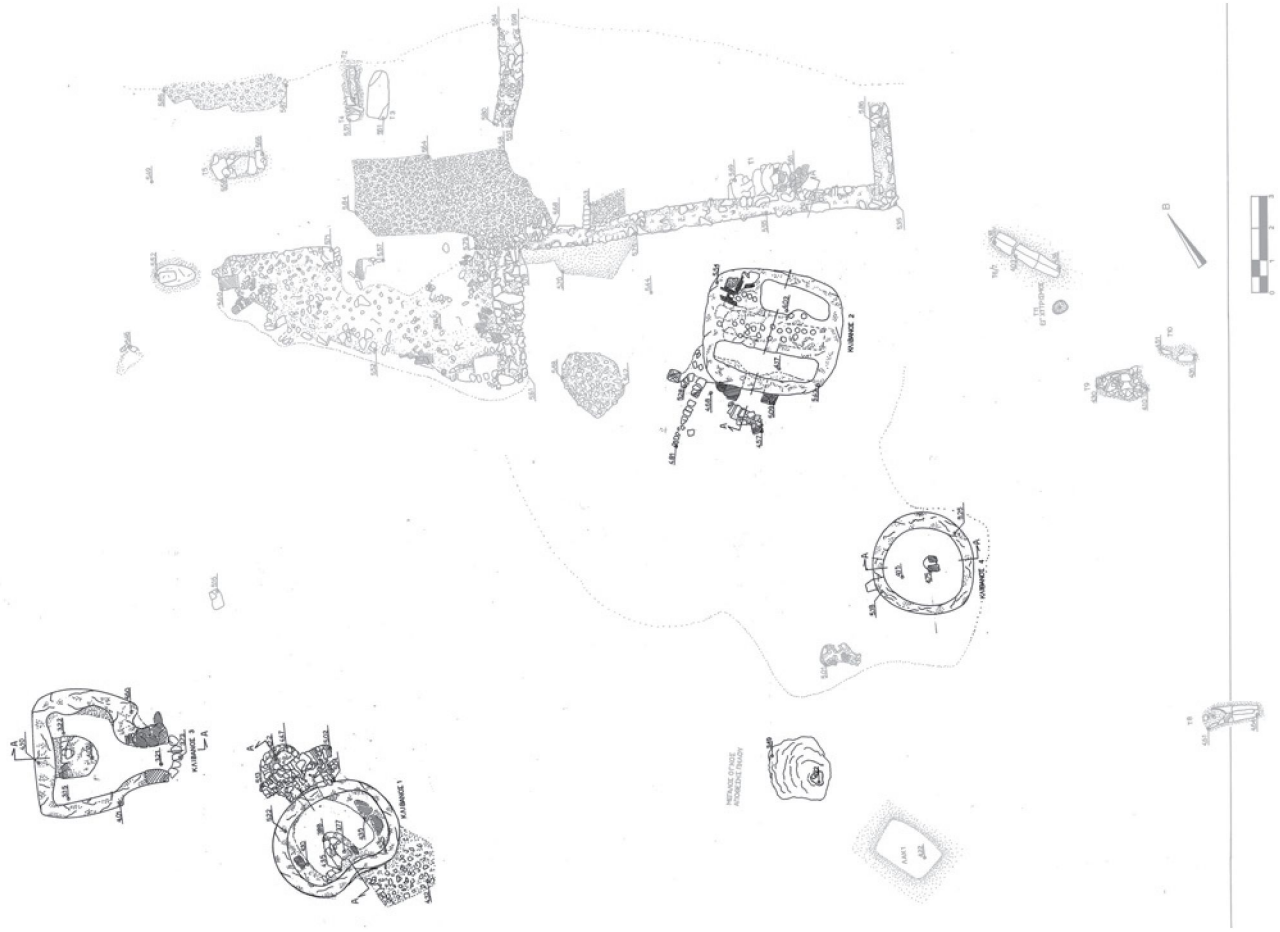


Fig. 107 Giannitsōn, K. Mazarakē, Kavalas Street, plan of the excavation.

14 **fig. 108**

Type: Ceramic workshop (bricks and roof tiles)
City: Thessaloniki
Area: Western Necropolis (**map:** 9e)
Address: 58 Promētheōs Street
Date: Late Byzantine period
Description: A Middle Byzantine cemetery was discovered above the ancient Roman necropolis during salvage excavations. At the north-western corner of the plot, part of the fire-tunnel and the combustion chamber of a seemingly rectangular pottery kiln were identified. The construction of the kiln had disturbed two Middle Byzantine graves, giving a *terminus post quem* for its construction date. The kiln was found filled with large bricks and roof tiles that were identified by the excavator as part of its superstructure.
Bibliography: Sampanopoulou, Promētheōs 58.



Fig. 108 58 Promētheōs Street, view of the kiln.

15 **figs 109-115**

Type: Ceramic workshop (vessels and moulds)
City: Thessaloniki
Area: City centre (**map:** 8l)
Address: Nauarinou Square, Galerius' complex
Date: Second or first century BC to the first century AD
Description: During the salvage excavation conducted on the site, it was discovered that a pottery once operated in the artisanal complex that was found under the palace of Galerius in the period between the second or first century BC and the first century AD. A horseshoe-shaped clay kiln was found under the mosaic floor of the north *stoa* of the com-

plex. The kiln had been built with stone plastered with clay and had a clay floor. It was used for firing moulds for metal objects, probably statues. Fragments of many moulds were found in the combustion chamber and in the fire-tunnel. Several of them were found with copper and slag residues. The presence of a potter at the site is also indicated by uniform clay finds that have been located in the space between the Octagonon and the Nymphaion of the palace (so-called Room Δ). All these finds are dated to the period between the second or first century BC and the first century AD. Another, horseshoe-shaped pottery kiln was found under a Roman villa located under the southern *stoa* of the palace. The same, or a neighbouring pottery was also discovered in a nearby plot (26 Pavlou Mela Street) to the south of Nauarinou Square. A pottery kiln was excavated here and also dated to the second or first century BC and the first century AD (**cat. no. 27**).

Bibliography: Karamperē / Christodoulidou / Kaïafa, To anaskaphiko ergo 533-534. – Karamperē / Christodoulidou, Galeriano Syngrotēma 427 pl. 114β, γ. – Karamperē / Christodoulidou, Diachronikotēta 393-400. – Karamperē, Metallagē 227-232.

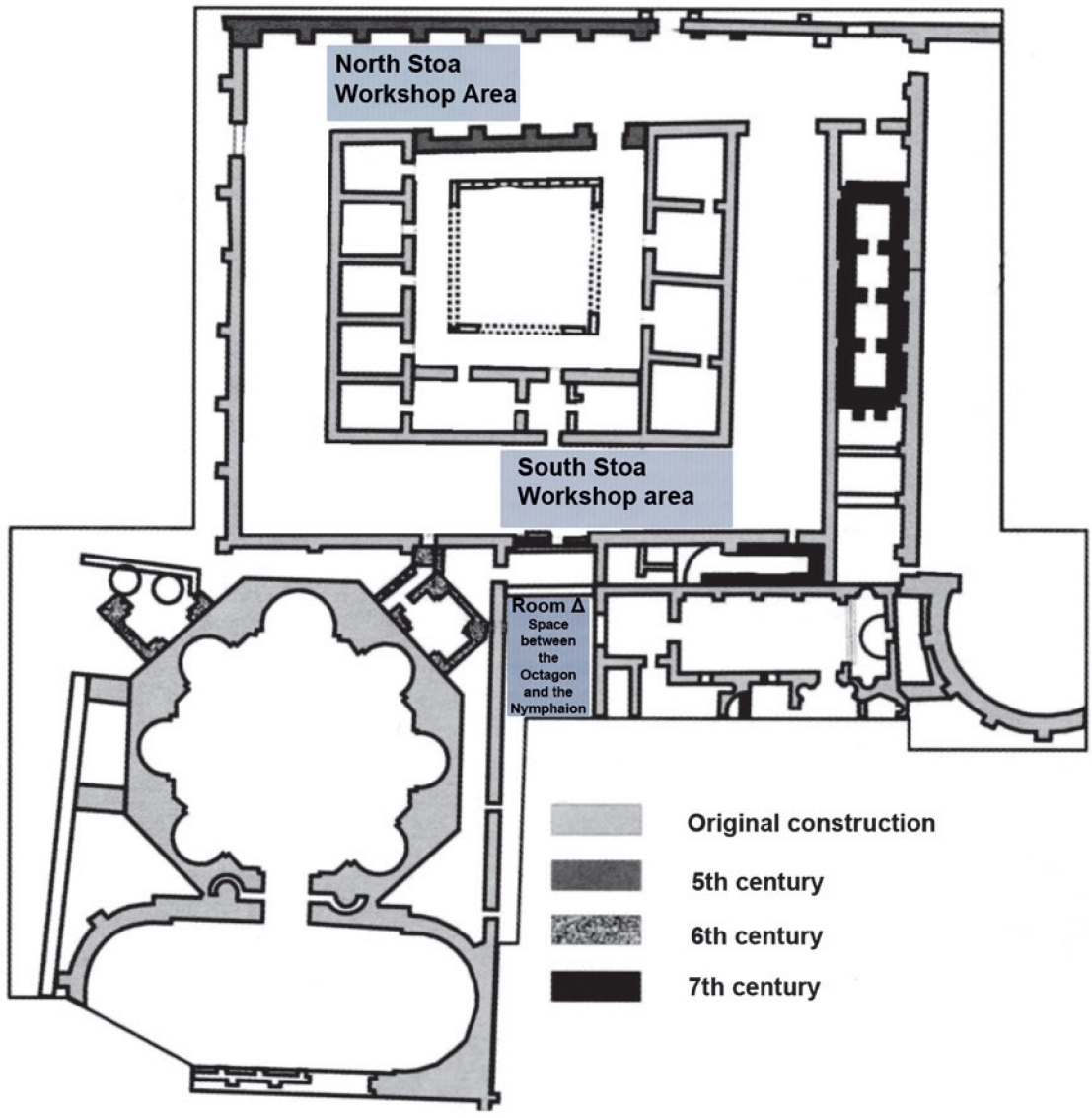


Fig. 109 Nauarinou Square, Galerius' Palace, plan with the designated areas of the workshops.



Fig. 110 Nauarinou Square, Galerius' Palace, general view of the excavation.



Fig. 111 Nauarinou Square, Galerius' Palace, view from the north of the kiln on the northern *stoa*.



Fig. 112 Nauarinou Square, Galerius' Palace, view from the west of the kiln on the northern *stoa*.



Fig. 113 Nauarinou Square, Galerius' Palace, view of the kiln on the southern *stoa*.



Fig. 114 Nauarinou Square, Galerius' Palace, view of the kiln at 26 Pavlou Mela Street, at the southern part of the Galerian complex.



Fig. 115 Nauarinou Square, Galerius' Palace, view of »Room Δ« east of Octagonon with pottery's remains.

16 **fig. 116**
Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: City centre (**map:** 7k)
Address: 18 K. Palaiologou Street
Date: Probably third century
Description: The remains of a large architectural complex, probably a bath house that had been also discovered at 37 Palaiōn Patrōn Germanou Street, and a large cesspit were unearthed in a salvage excavation conducted on the plot. Two construction phases were identified: the first one dated to the third century AD; and the second to the reign of Constantine I. It continued to be used throughout the Early Christian period. Four rectangular rooms built with schist plaques and mud are dated to the first phase. A pit with clay vessels, possibly indicating the presence of a pottery kiln on the site, is dated to the same phase.
Bibliography: Kourkoutidou-Nikolaidou, K. Palaiologou 18, 281-289 esp. 285. – On the excavation generally see Vitti, Poleodomikē exelixē 220-221 no. 103 fig. XXXII.

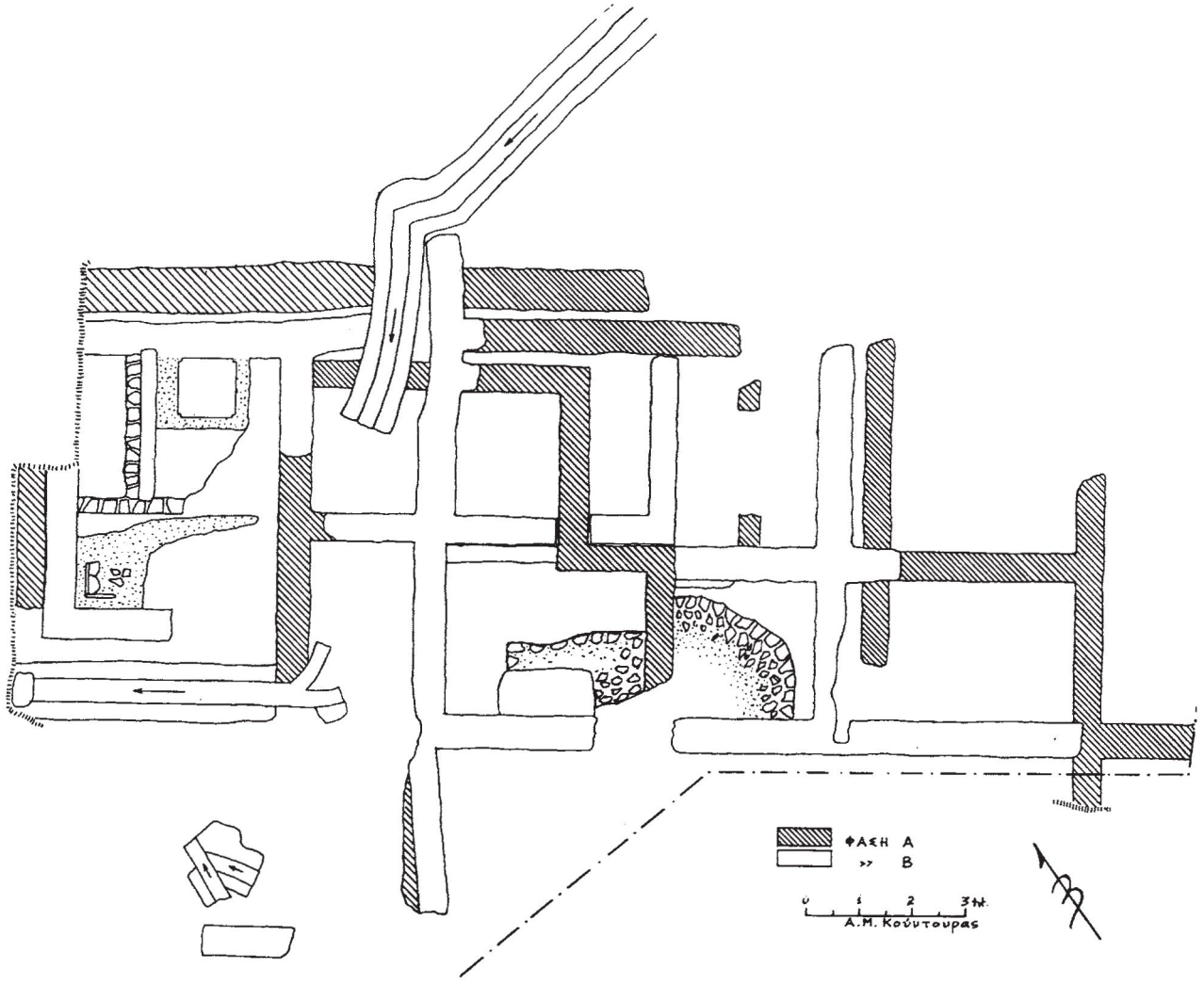


Fig. 116 18 K. Palaiologou Street, plan of the excavation.

17 **fig. 117**
Type: Ceramic workshop
City: Thessaloniki
Area: West end (**map:** 9f)
Address: 17 Mavilē Street
Date: Early Christian period
Description: The remains of the inner side of the city wall and one tower were uncovered during the salvage excavation conducted on the site. Two Roman pottery kilns were unearthed near the wall. On the adjoining plot on 15-17 Mavilē Street (**cat. no. 108**) remains of a workshop were unearthed, possibly connected with these finds.
Bibliography: Vavritsas, Anaskaphai kentrikēs Makedonias 505.

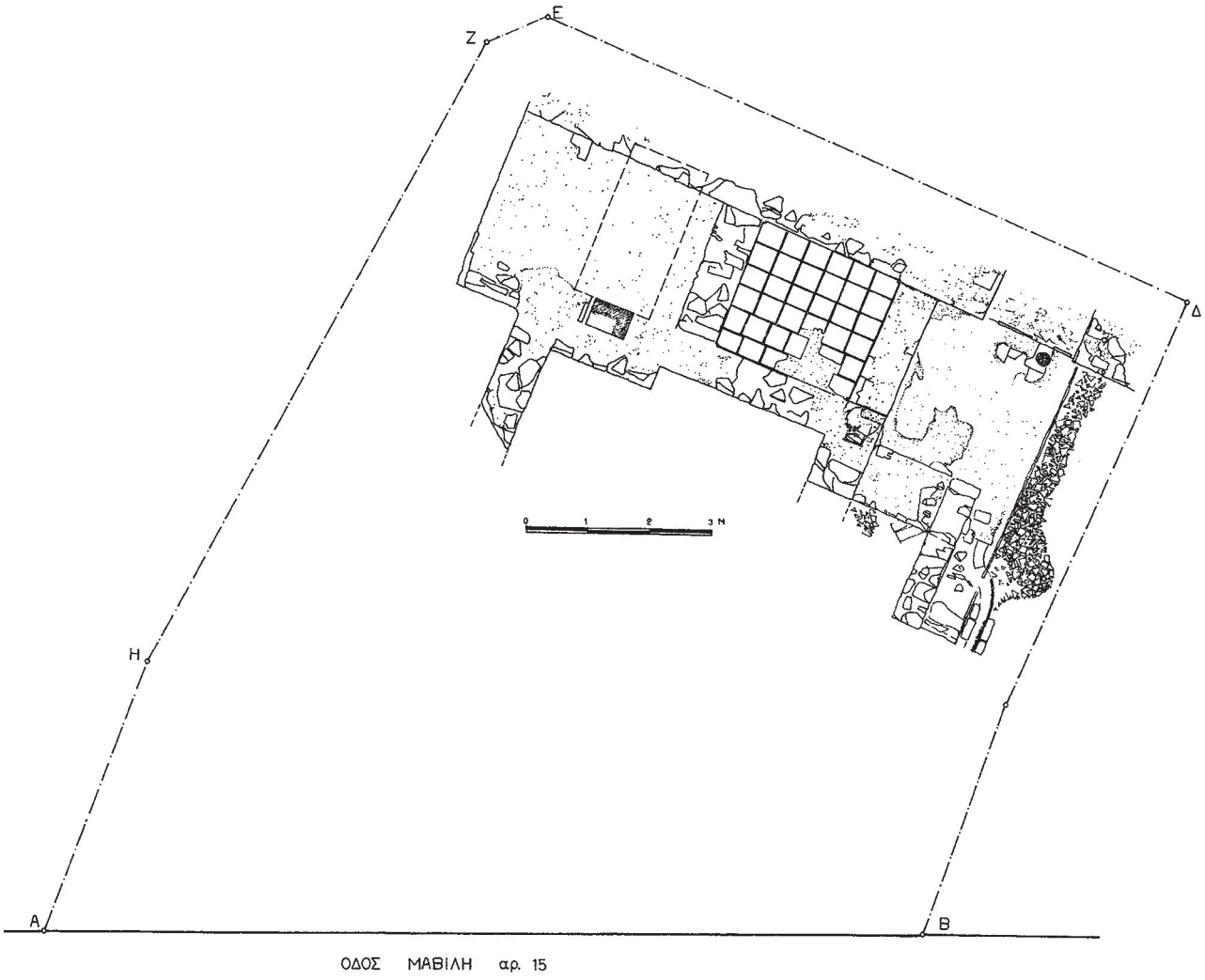


Fig. 117 17 Mavilē Street, plan of the excavation.

18 **figs 118-119**
Type: Ceramic workshop (vessels, bricks and roof tiles)
City: Thessaloniki
Area: East end (**map:** 6I)
Address: 30A K. Melenikou Street
Date: Early Christian period
Description: A pottery built on the site of the early Roman cemetery incorporated within the Early Christian city wall, utilising the water of a nearby stream, was discovered during salvage excavations inside and adjacent to the eastern city walls. The following are preserved: a reservoir for washing clay; two pits; and a partly closed room made of wooden planks. Firing chambers of two large rectangular kilns for firing vessels and building material (roof tiles and bricks) were also discovered. The workshop underwent several reconstruction phases and continued operating until the Byzantine period.
Bibliography: Cat. Thessaloniki 2005, 6. – Markē, Sōstikes anaskaphes 216-217.

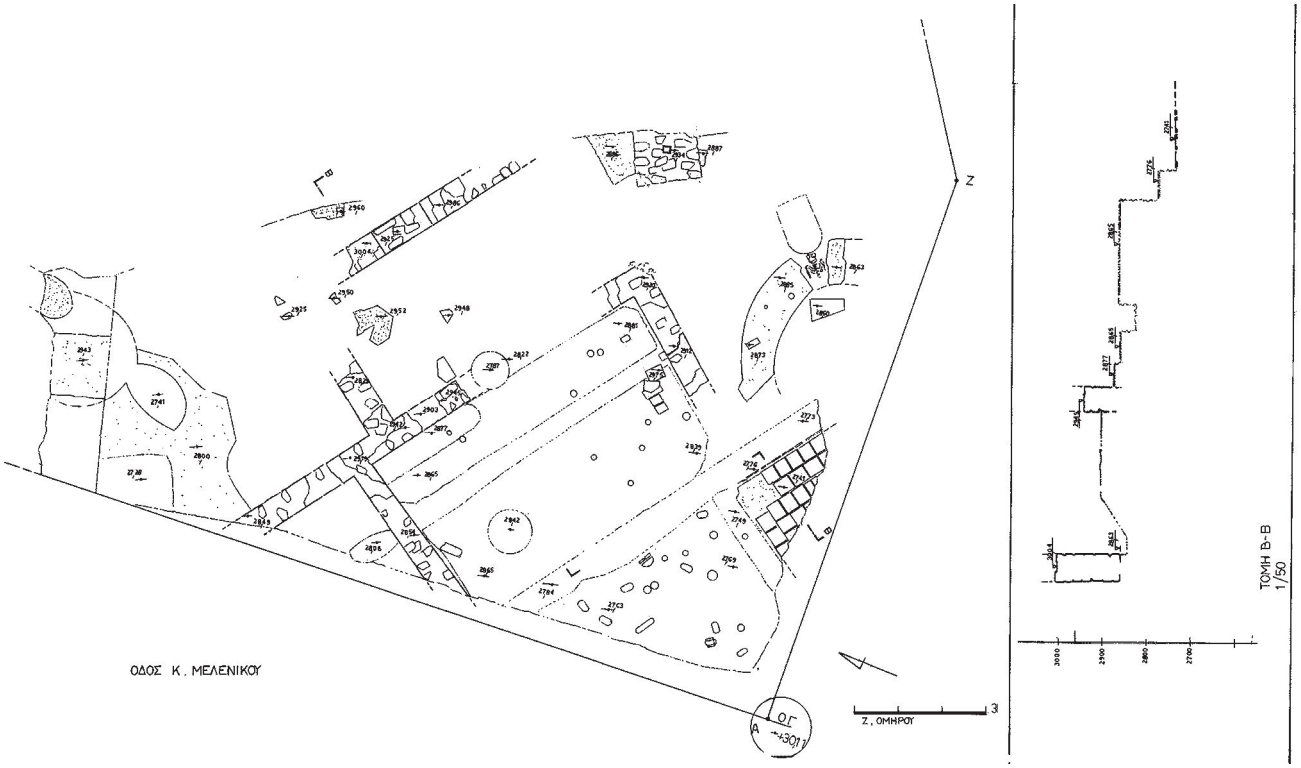


Fig. 118 30a K. Melenikou Street, plan and section of the excavation.



Fig. 119 30a K. Melenikou Street, reservoir or basin for clay washing.

19 **figs 120-129**

Type: Ceramic workshop (vessels)

City: Thessaloniki

Area: City centre (**map:** 7i, 8i)

Address: Ancient Agora

Date: Third century BC to early second century BC; first century BC to first century AD; fifth to seventh centuries AD

Description: The size of the site and the complexity of its successive uses over a very long period of time coupled with a paucity of available information makes it impossible to present the findings as individual workshops. It is more preferable, therefore, to present these activities as four groupings of industries, arranged according to their spatial distribution and chronological sequence (**figs 120-121**).

a) North end of the east wing. Pits for extraction of clay were dug during the period from the last quarter of the third century BC to the early second century BC. These were filled relatively soon afterwards and private dwellings were built over them[555]. A refuse pit was located at the northern end of the western part of the eastern *stoa* of the Agora, and adjoining a complex of two kilns, which was sealed by a mid-fourth-century mosaic floor (**fig. 122**). Grinding-stones from hand-mills were found in the pit. From marks visible on the grinding-stones it can be reconstructed that they were re-used as parts of pottery wheels (flywheels) and they can be divided into two different groups: i) those with nicks arranged triangularly (**fig. 124**), which were used in hand-turned wheels; and ii) those with an ellipsoidal widening of their central whole (**fig. 123**), which were used in foot-driven wheels (kick wheels). It is datable to before the fourth century, evidently before the end of the first century AD when the use of the space became official, and may possibly be from the third to second-century BC period of artisanal activity on the site. The digging of pits for the extraction of clay and the building of

555 Adam-Velenē, Dekachronē poreia 29.

workshop rooms in the fifth century destroyed parts of the mid-fourth-century mosaic floors[556].

A kiln was found under the floor of the central aisle of the city's mint at the edge of its southern wall. It is an irregular oval in shape (max. diam. 1.50 m). Three of the originally six makeshift pilasters that supported the floor of the firing chamber are preserved. The construction of this kiln destroyed another, earlier and similar kiln. Its firing mouth was orientated towards the west. Nothing of the upper part of the kiln is preserved (**figs 125-126**). This find obviously predates the fourth-century mint and is probably from before the first century AD when the site gradually acquired its official character. It is possible that it is from the period of the third or second century BC.

A complex of two kilns was discovered at the northern end of the western part of the eastern *stoa* of the Agora. Its construction had destroyed a mid-fourth-century mosaic floor. The kilns ceased to operate in the sixth century (**fig. 122**).

A brick-built, horseshoe-shaped kiln (0.80 m × 0.70 m) was discovered north of the Odeion, at the southern end of the north-eastern part of the eastern *stoa* of the Agora. The opening of the kiln was orientated northwards. Three surviving pilaster supports of a firing chamber floor (**fig. 127**) indicate that another kiln was later built on top of this one. Both kilns are datable probably to later than the fifth century.

b) South side of the square. Pits for clay extraction were dug sometime in the last quarter of the third century or the early second century BC and remained in use until the first century AD. Early workshops consisting of makeshift pole-supported constructions were found at the southern and western ends of the square (**fig. 128**). These are dated to sometime before the end of the first century AD, when the shops were built, but may date from the late third to second-century BC period of artisanal use of the site. After the abandonment of the Agora in the middle of the fifth century, pits for the extraction of clay were re-opened (**fig. 129**). Other pits were also found. From their size and differing levels, these communicating pits were evidently used for cleaning the clay by precipitation.

c) South-eastern sector of the excavation (outside the Ancient Agora at its southern edge). During the last quarter of the third to early second century BC, pits for clay extraction were dug and re-filled shortly after.

d) East wing, Odeion. Sometime in the fifth century AD, the area of the Odeion was used for artisanal activities, where e. g. large pits were dug (**fig. 125**).

Bibliography: Adam-Velenē, Dekachronē poreia 29. – Kalavria/Bolē, Strōmatographia 48. – Valavanidou, Ergastēriakes chrēseis 119-120, 123-127. – Velenēs et al., Programma Archaias Agoras 251. – Velenēs, Archaia Agora 129-141. – Velenēs/Adam-Velenē, Anaskaphes kai anstēlōtikes ergasies 159-160. – Geōrgakē/Zōgraphou, Strōmatographia 66-67.

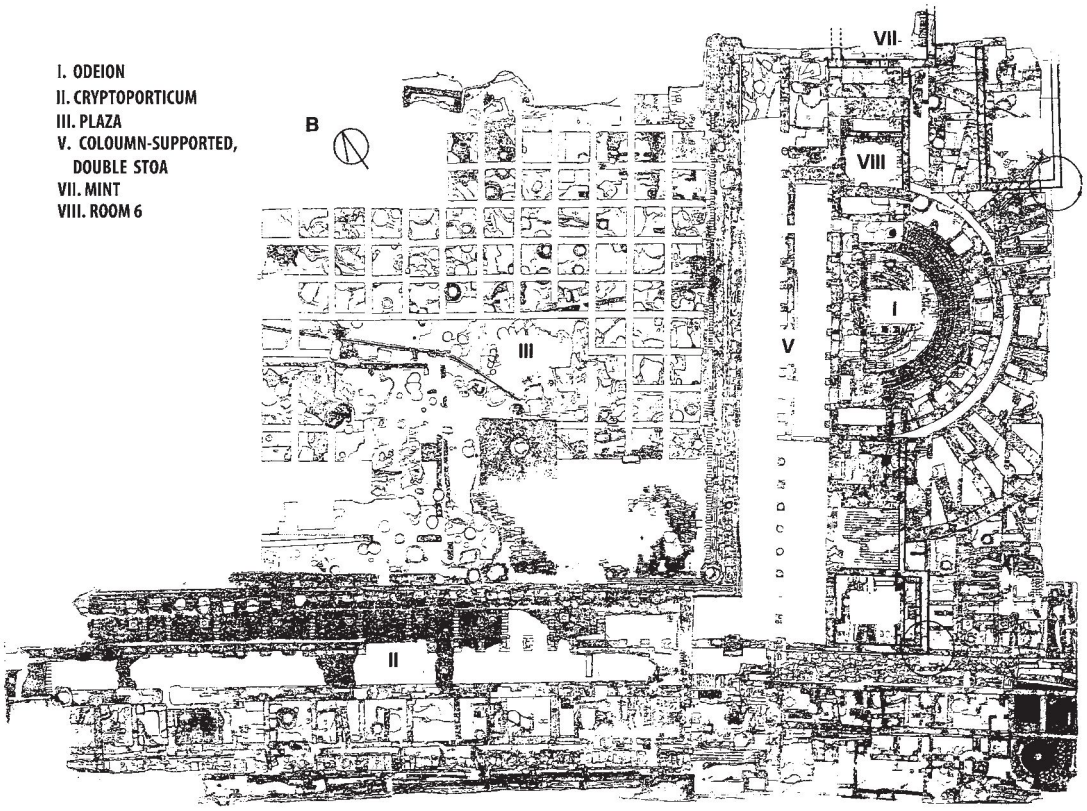


Fig. 120 Ancient Agora, general plan of the excavation.

556 Valavanidou, Ergastēriakes chrēseis 123.

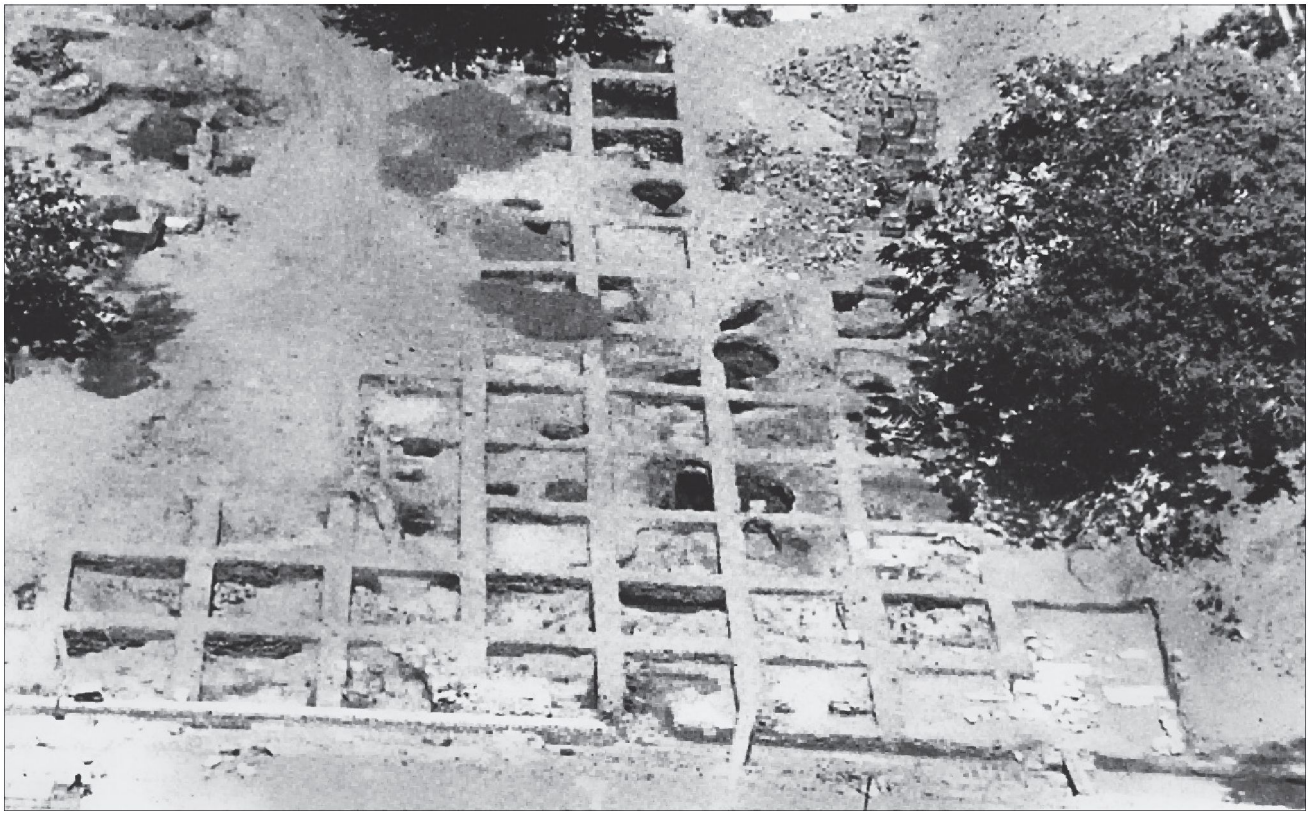


Fig. 121 Ancient Agora, general view of the excavation.

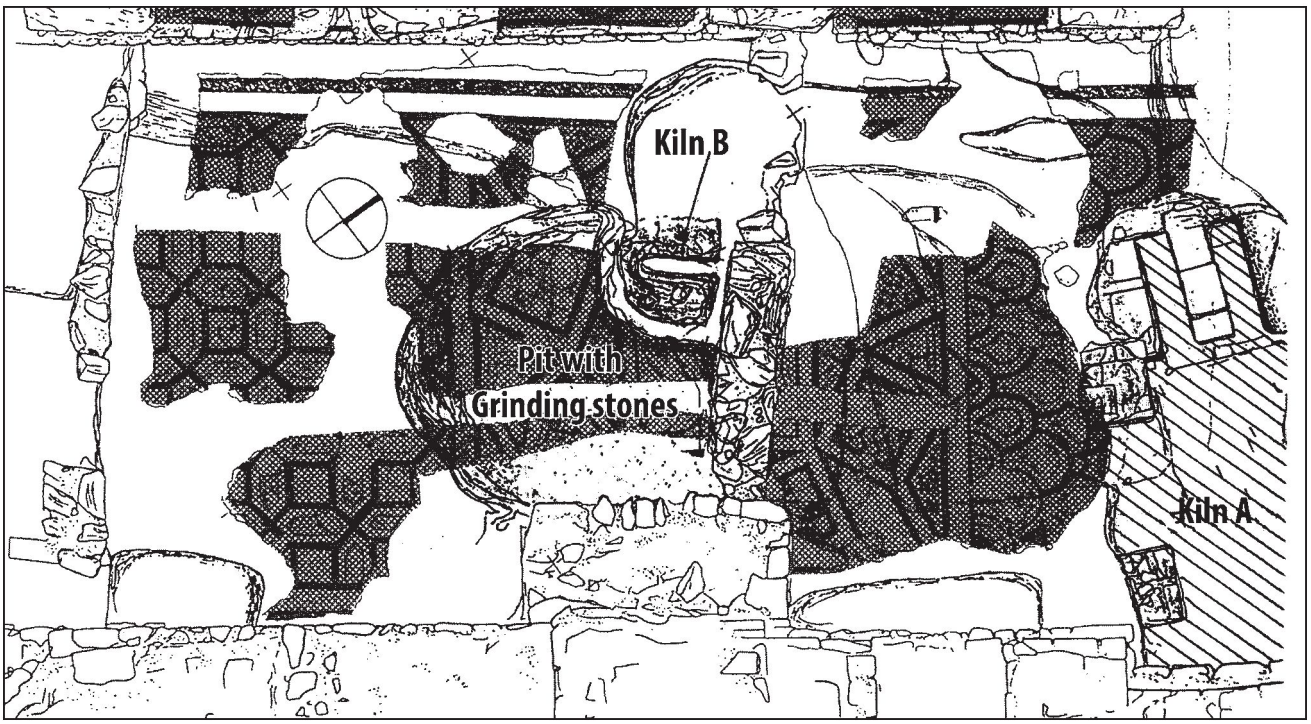


Fig. 122 Ancient Agora, NE end of the eastern stoa. Plan of the area of the Kilns and the pit with grinding stones.

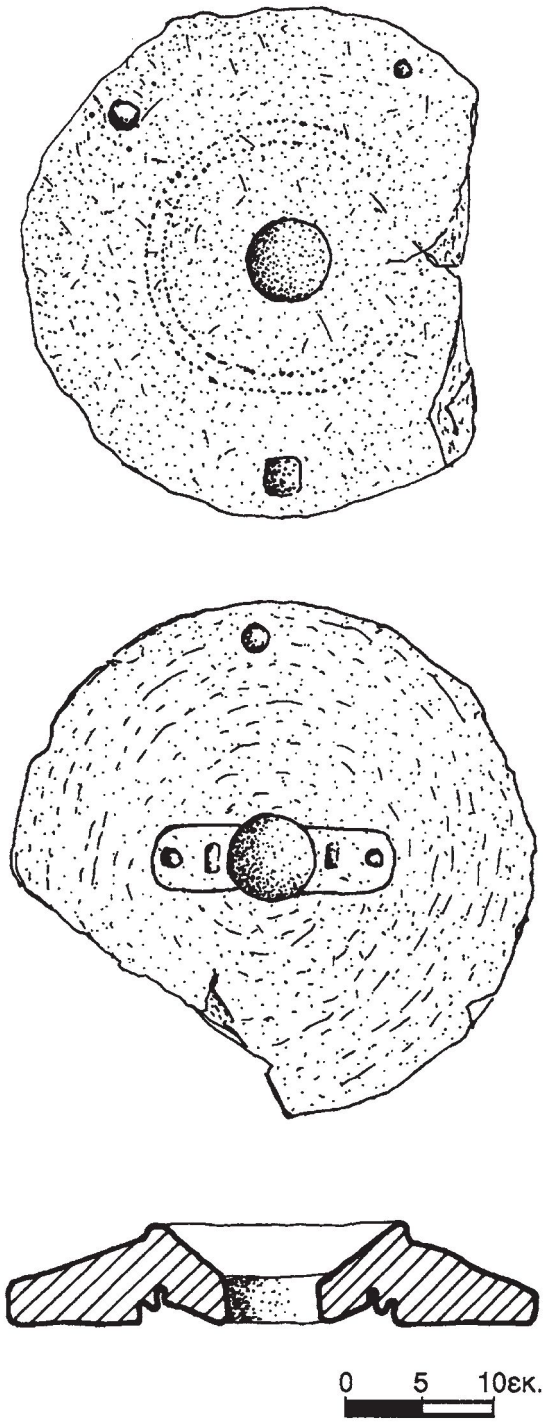


Fig. 123 Ancient Agora, grinding stone with a central mark of a secondary use in the form of an elongated ellipse.

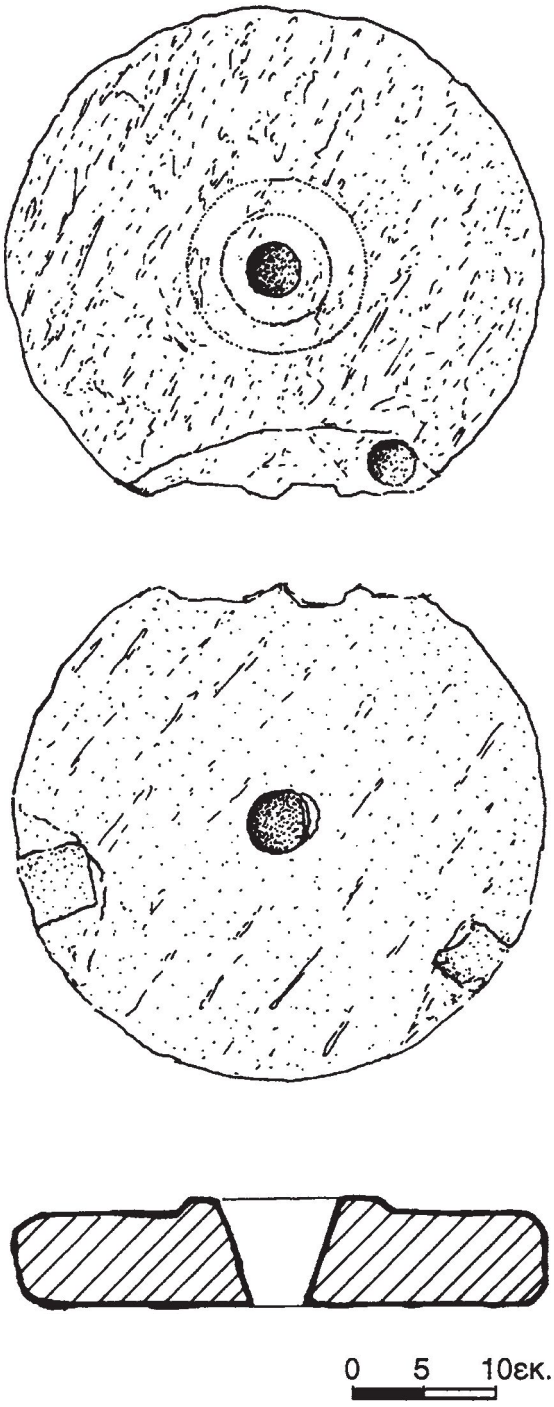


Fig. 124 Ancient Agora, grinding stone with marks of a secondary use arranged in the form of an equilateral triangle.

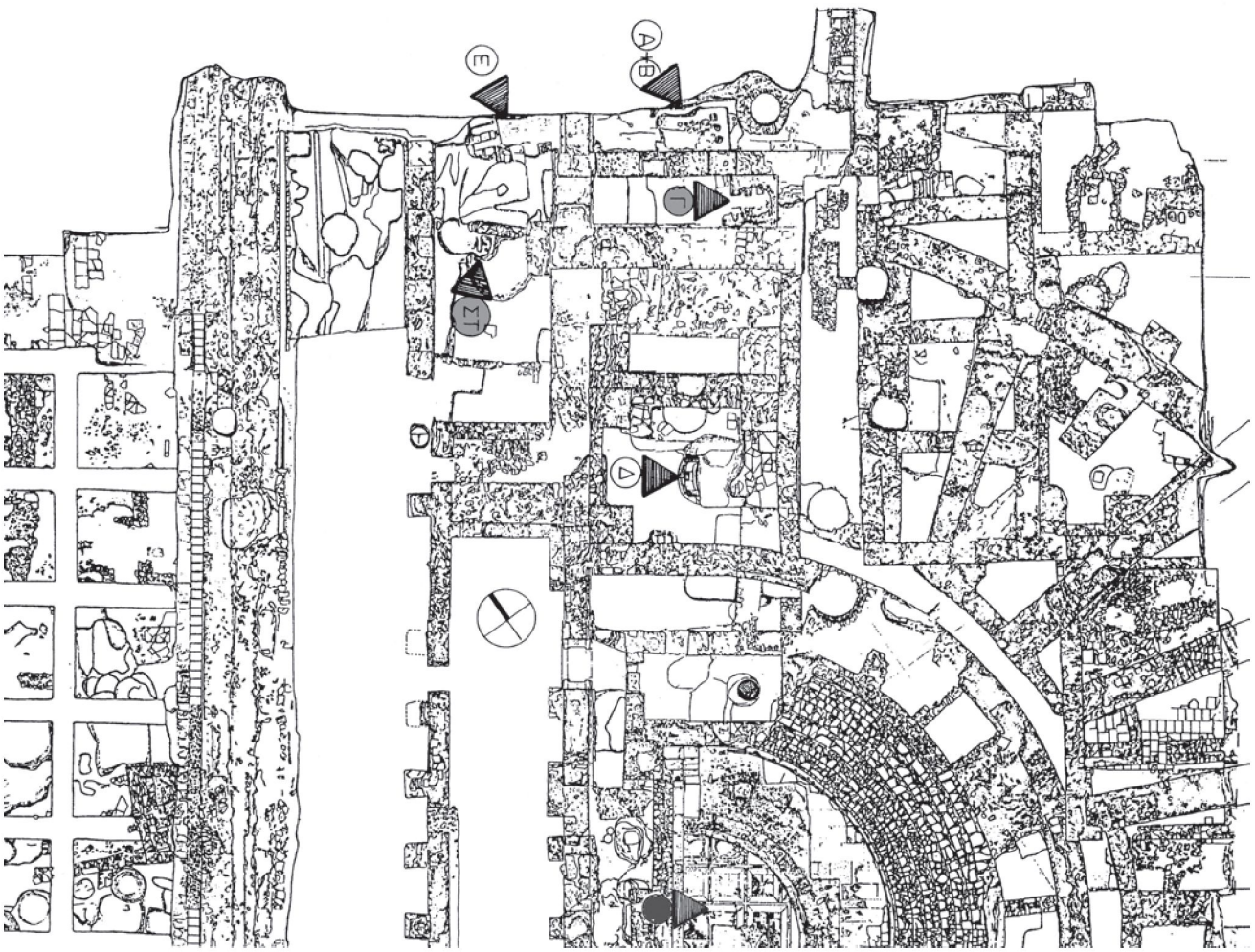


Fig. 125 Ancient Agora, NW corner of the Agora. The area north of the Odeion. Kilns are marked with grey circles.

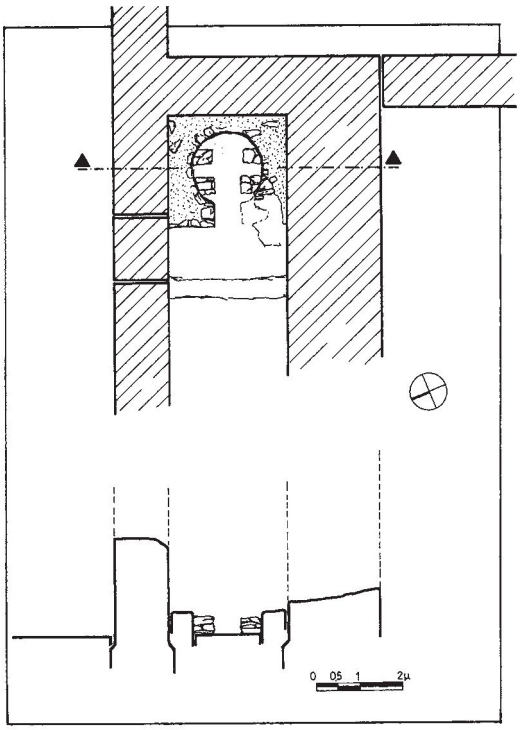


Fig. 126 Ancient Agora, kiln 3.

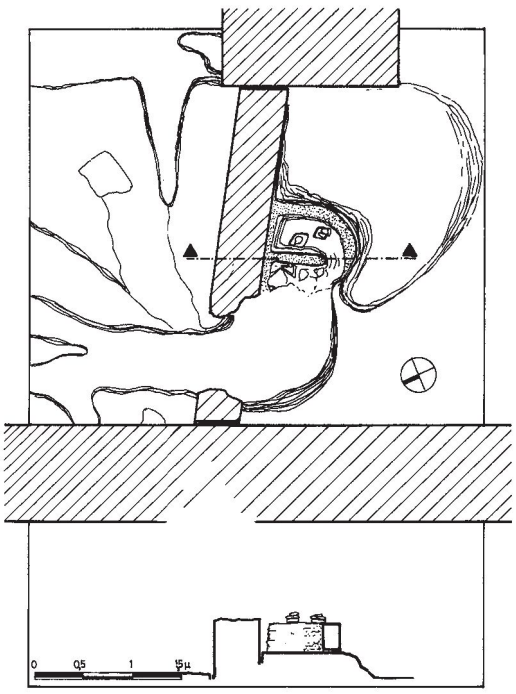


Fig. 127 Ancient Agora, kiln 6.



Fig. 128 Ancient Agora, makeshift pole-supported workshops at the SW end of the plaza.

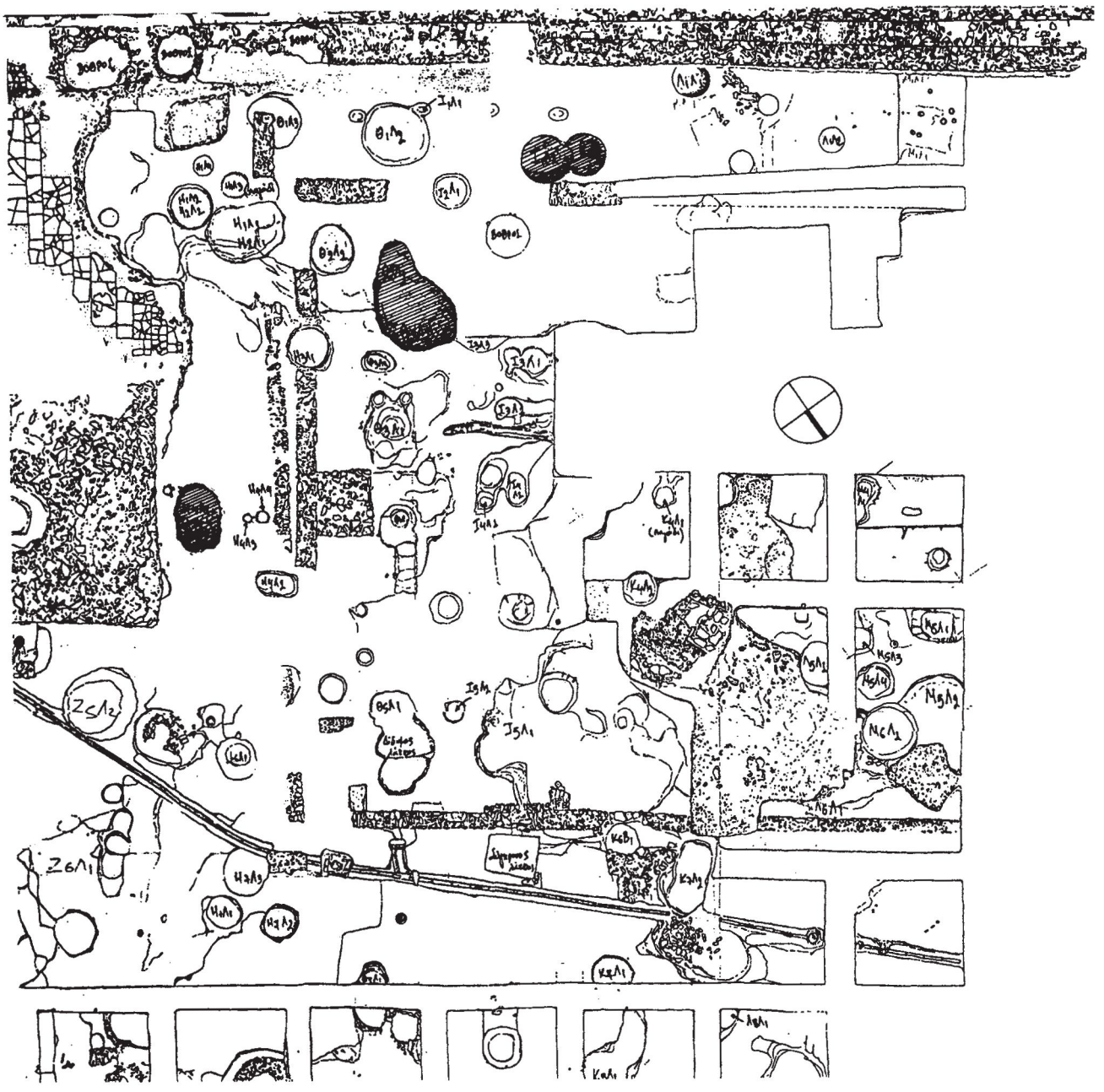


Fig. 129 Ancient Agora, plan of the SE corner of the Agora's plaza.

20 figs 130-131

Type: Ceramic workshop (probably for vessels)
City: Thessaloniki
Area: Western Necropolis (**map:** 8c)
Address: N. Kapatou, G. Ivanōph and Galanakē Streets, at the plot of the 66th Primary School
Date: Possibly Early Christian
Description: In 2004, two cisterns were discovered at the site of the Hellenistic and Roman cemetery. One was Early Christian and the other of a much later date. Four hearths were also located. Two were semicircular ones (diam. 1.40 m and 1.20 m) with walls and floors made of brick that had been distorted or partly molten by the high temperatures. The other two were ellipsoidal (1.5 m × 1 m and 2.5 m × 1.40 m) makeshift constructions made with stone rubble and mud mortar.
Bibliography: Makropoulou, Taphoi kai taphes 373 nt. 240, identifies the finds as two Early Christian clay vessel kilns. – E. Lamprothanasē (site excavator), personal communication.



Fig. 131 N. Kapatou, G. Ivanōph and Galanakē Street, at the plot of the 66th Elementary School, view of the kiln.

21 fig. 132

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: West end (**map:** 7f)
Address: 27-29 Stratēgou Doumpiōtē plot and 37 Agiou Dēmētriou and 2 Philōta plot
Date: Eighth century
Description: The remains of an eighth-century pottery were discovered above the ruins of Early Christian architectural layers close to the western city walls. It was datable by an early eighth-century coin found in its walls. In addition to partial remains of mud-built walls, masses of raw clay and fragments of defective, plain vessels, some of them probably for transportation, were also found.
Bibliography: Kousoula/Kōnstantinidou/Tourtas, Agiou Dēmētriou kai Philōta. – Makropoulou, To ergo.

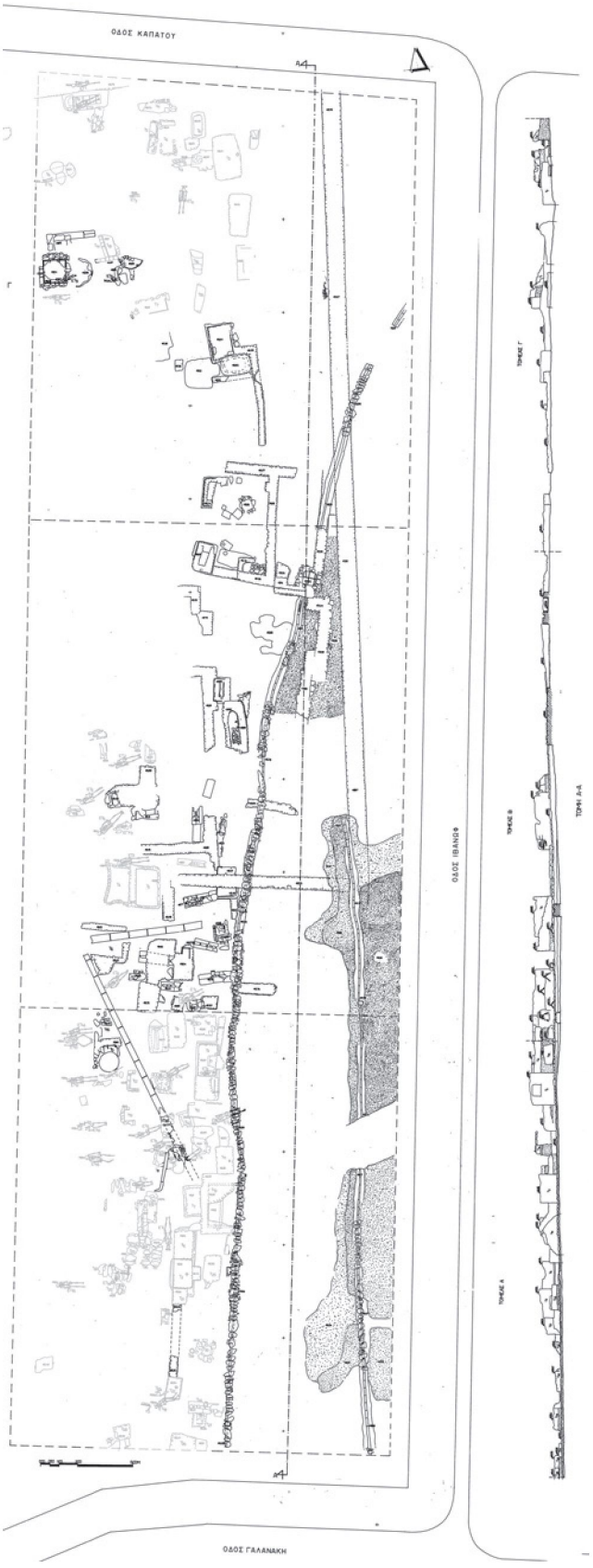


Fig. 130 N. Kapatou, G. Ivanōph and Galanakē Street, at the plot of the 66th Elementary School, general plan and section of the excavation.



Fig. 132 27-29 Stratēgou Doumpiōti Street, general view of the excavation.

22 **fig. 133**
Type: Ceramic workshop (probably for vessels)
City: Thessaloniki
Area: West end (**map:** 10f)
Address: 18 Moskōph Street
Date: Ninth to tenth centuries
Description: Four large, probably vaulted, oblong commercial storehouses were found next to the south-western part of the city wall. These were identical to the one discovered in excavations conducted in the adjoining plot at 2 Dōdekanēsou Street. The commercial nature of the structures is indicated by the large number of storage and transportation vessels found there and due to their proximity to the city's Constantinian harbour. Within the enclosure of the later, eleventh-century cemetery found on the site, a kiln and a large section of a water pipe were unearthed. The kiln is circular (diam. 2.77 m) and built with rubble and mud. An intact combustion chamber and a small part of the firing chamber were discovered during the excavations. It has been assumed that it was a pottery kiln.
Bibliography: Cat. Thessaloniki 2002, 15. – Markē, Epicheirēmatikotēta 232, 238-239.

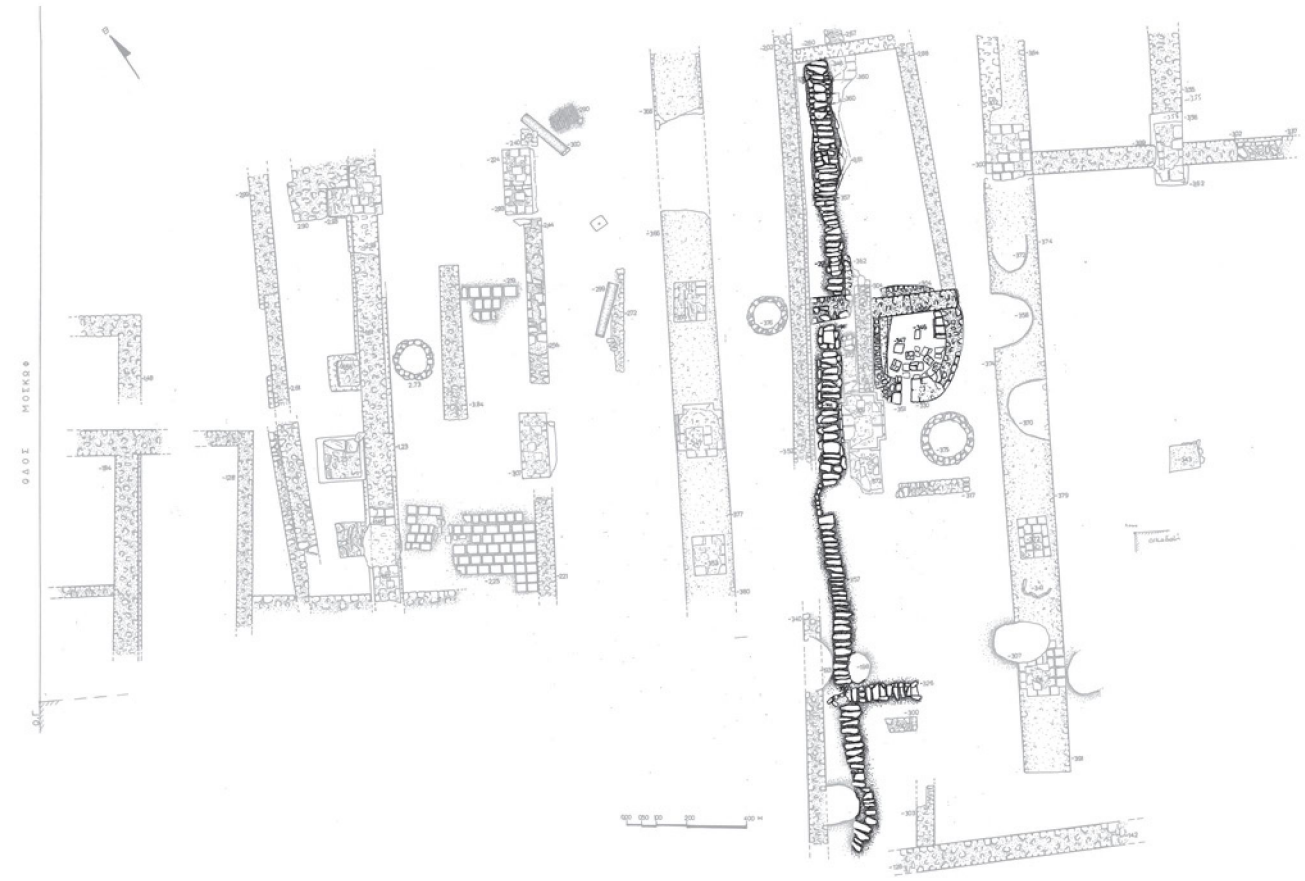


Fig. 133 18 Moskōph Street, plan of the excavation.

23 **figs 134-135**
Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: West end. Vardariou Fortress (Top Hane) (**map:** 11f)
Address: Phrangōn and Moskōph Street
Date: Probably tenth century
Description: A pottery kiln was located to the east of and very close to the rectangular tower at the junction of the western city wall and the fortress of Top Hane, or Frourio Vardariou. It is a circular kiln (diam. 3.3 m) and the floor of the firing room was probably supported by a central post. The combustion chamber is preserved, made from rubble, bricks

and clay mortar. Two large cut stones north-east of the kiln form the fire-tunnel. Traces of the firing chamber floor are visible at its south-east side, traceable on the groove which is preserved on the internal face of the walls of the kiln. Remains of vitrified clay were noticed on the circumference of the kiln. A wall supporting the firing chamber was found at the east side of the kiln, indicating the instability of the kiln. At the same layer, some Byzantine and Post-Byzantine sherds were found. In the fill of the kiln a coin of Leo VI (886-912) was found, offering a general chronological indication for the kiln.

Bibliography: Kourkoutidou-Nikolaidou/Tsioumē, Phrourio Vardariou 239-240. – Markē, Symplērōmatika archaiologika stoicheia 139, 148 illus. 1 fig. 7.

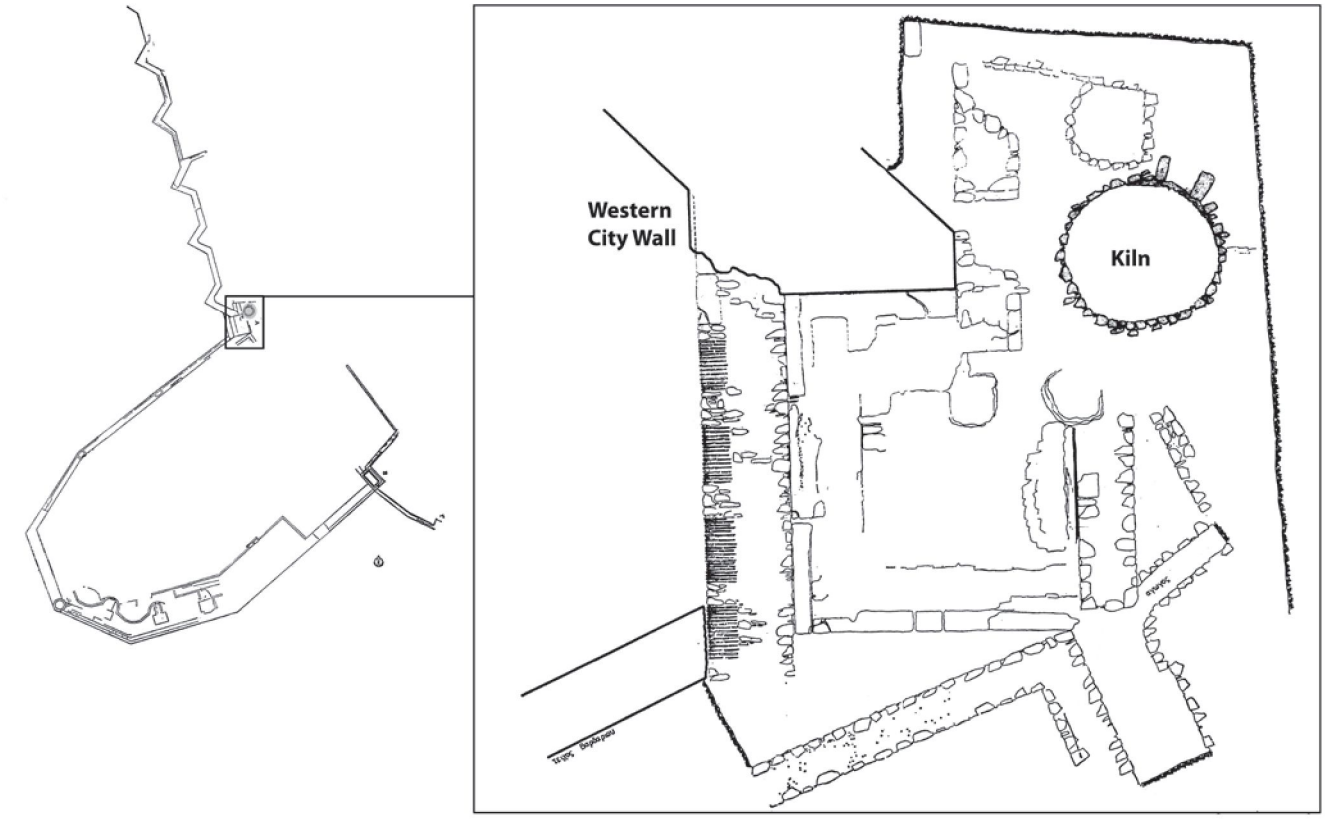


Fig. 134 Phrangōn and Moskōph Street, plan of the Top Hane fortress. The position of the kiln is marked. Details with plan of the tower and the kiln.



Fig. 135 Phrangōn and Moskōph Street, view of the kiln.

24 **figs 136-138**

Type: Ceramic workshop (vessels)

City: Thessaloniki

Area: Centre. (**map:** 9h)

Address: Egnatia Street, Venizelou Metro Station excavation

Date: Eleventh to early twelfth centuries

Description: Remains of a pottery kiln in layers dated to the eleventh or early twelfth century were discovered during the excavations conducted for the Venizelou Metro Station. Clay bars of a pottery kiln were found. Originally, they were partly embedded in the walls of the kiln and formed the shelves on which the vessels were arranged for firing.

Bibliography: Makropoulou et al., METRO kata to 2011. – Makropoulou, To ergo. – Konstantinidou/Raptis, Archaeological Evidence of an 11th Century Kiln.

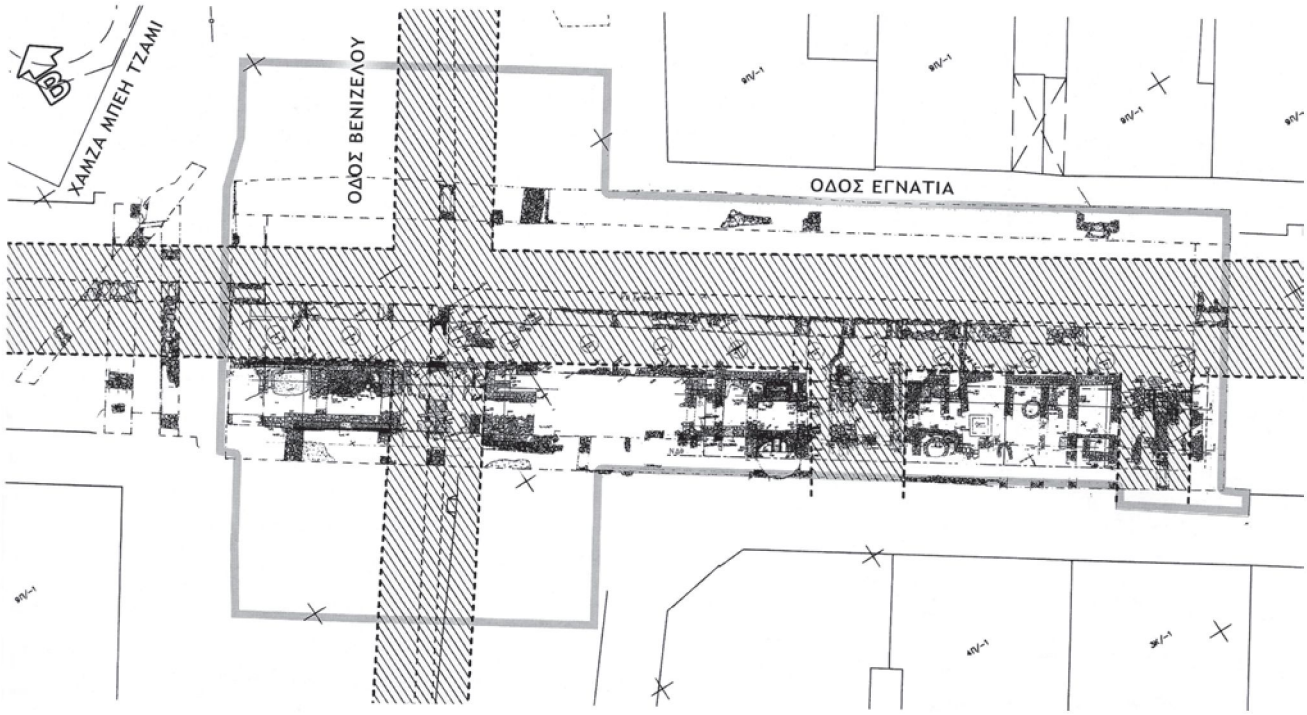


Fig. 136 Egnatia Street, Venizelou Metro Station excavation, general plan of the excavation.

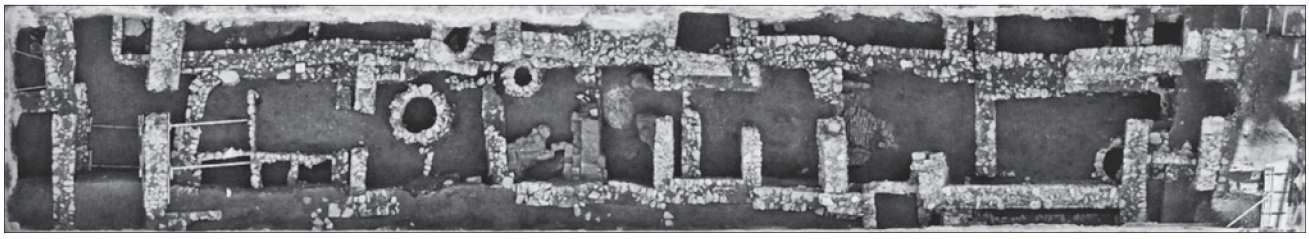


Fig. 137 Egnatia Street, Venizelou Metro Station excavation, general view of the excavation.

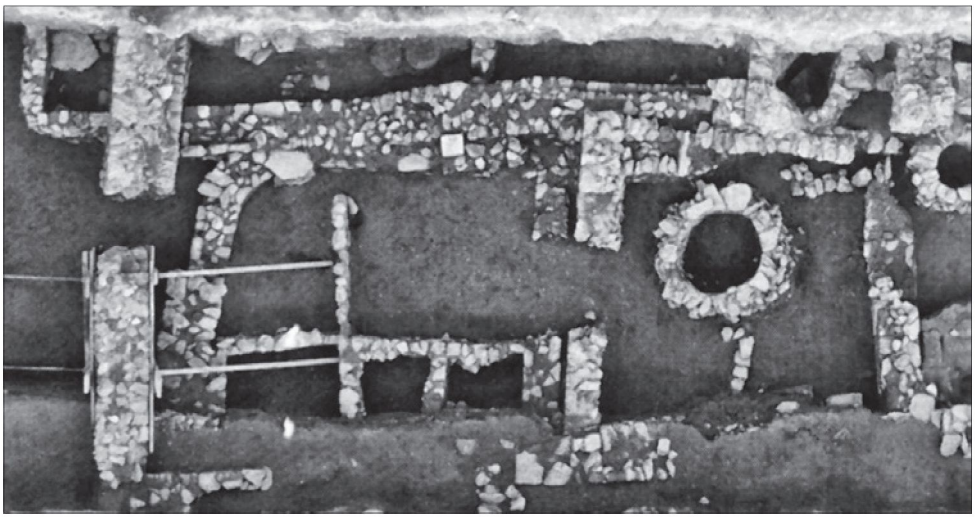


Fig. 138 Egnatia Street, Venizelou Metro Station excavation, view of the workshop from above.

25 fig. 139

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: West end. Vardariou Fortress (Top Hane) (**map:** 11g)
Address: East of the Anaglyphou Tower (Olympiou Diamantē Street)
Date: Byzantine

Description: Remains of a circular kiln, possibly with a central post that supported the floor of the firing chamber, were found east of the Anaglyphou Tower, Vardariou Fortress sector, at the junction of the western wall and the sea wall.
Bibliography: Markē, Symplērōmatika archaiologika stoicheia 139, 148, illus. 3.

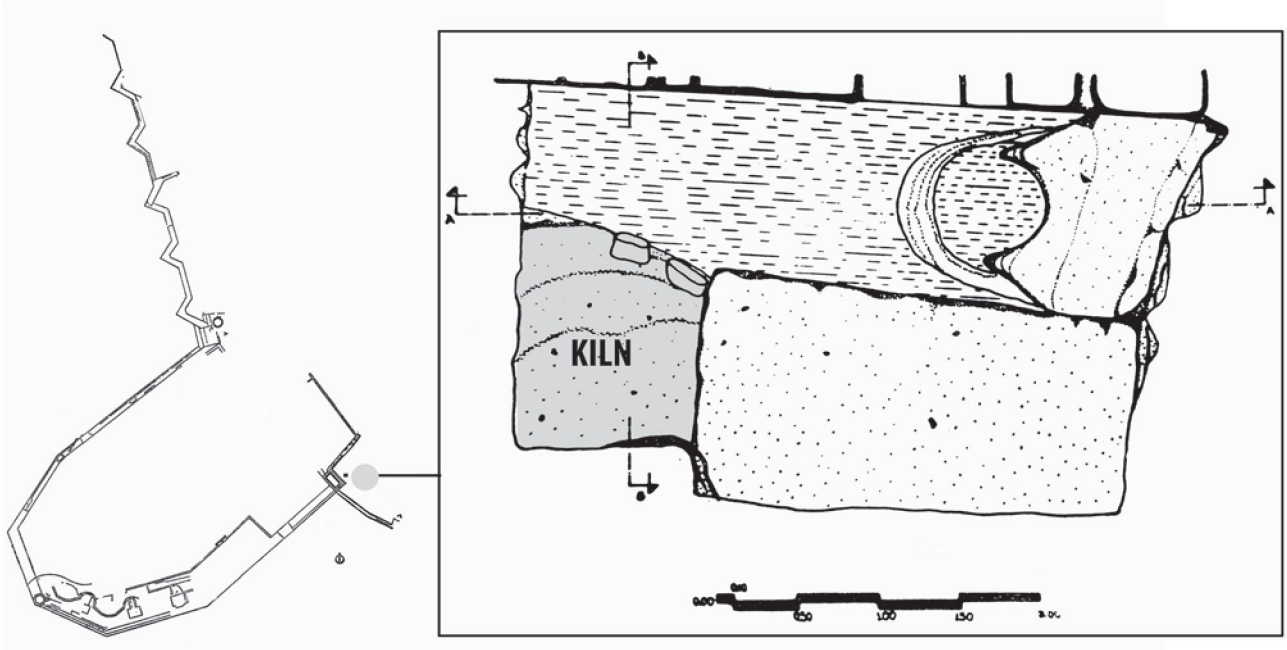


Fig. 139 East of the Anaglyphon Tower (Olympiou Diamantē Street), plan of the Top Hane fortress. The position of the kiln is marked. Detail with the excavated part of the pottery kiln highlighted.



Fig. 140 Ancient Agora, unfinished clay vessels.

26 figs 140-143

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: City centre (**map:** 8i)
Address: Ancient Agora
Date: Late thirteenth to early fourteenth centuries
Description: The Ancient Agora gradually lost its official character after the fifth century AD and several workshops and houses were built on the site. The shops along the street on the south side of the Agora continued to operate at least until the end of the Byzantine period. Since the 1960s, large quantities of glazed pottery sherds have been found during excavations conducted on the site. Among other finds, a large number of pottery stilts and unfinished bowls that were prepared for glazing have been found, indicating that there was a pottery in this area engaged in the production of glazed tableware vessels. The well-known motifs of a bird in profile, concentric circles and schematised rinceau have been recognised among the products of this area.
Bibliography: Adam-Velenē, Archaia Agora 517-521 esp. 519. – Cat. Bonn 2010, 344 nos. 488, 489 (D. Papanikola-Bakirtzi). – Unpublished glazed ceramic material in the Museum of Byzantine Culture (inv. no. BK 4614).



Fig. 141 Ancient Agora, unfinished clay vessel.



Fig. 142 Ancient Agora, unfinished clay vessel.



Fig. 143 Ancient Agora, deformed and unfinished vessels.

27
Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: City centre (**map:** 9I)
Address: Nauarinou Square, Galerius' complex
Date: Thirteenth to fifteenth centuries

fig. 109

Description: Among the finds from the excavations conducted on the site in the 1960s and 1970s, there are several glazed bowls and pottery stilts, indicating the presence of a pottery that produced glazed tableware vessels.
Bibliography: Unpublished. Personal observation and research of material from unpublished excavations.

28 **figs 263, 265**

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: City centre (**map:** 9j)
Address: 45 Vasileōs Ērakleiou Street
Date: Late Byzantine to possibly Ottoman
Description: The junction of two ancient streets and parts of two blocks with luxurious fourth-century buildings were discovered during salvage excavations at the site. These had undergone several changes in the Early Christian period. Also on the site, a sixth-century secondary glass workshop (**cat. no. 64**) was unearthed, as well as several water pipes and reservoirs datable to the Byzantine and Ottoman periods. A number of pottery stilts and parts of a floor connected with artisanal activity were also found. The Monastery of Hagia Theodōra, lying to the north of the plot, flourished from the ninth century onwards and it is probable that the plot was part of it.

Bibliography: For the excavation, see Akrivopoulou, Vasileōs Ērakleiou 45, 255-262. – The finds are currently studie by Prof. Melina Paisidou.

29 **figs 144-145**

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: City centre (**map:** 9i)
Address: 19-21 Aristotelous Street
Date: Thirteenth to fourteenth centuries
Description: Mainly Ottoman and modern structures have been discovered during the salvage excavations conducted on the site. The oldest finds have been dated to the thirteenth or fourteenth centuries, and among them many pottery stilts have been found, indicating the presence of a pottery here. At the same site, remains of a possibly nineteenth century workshop, probably an olive press, were also discovered.
Bibliography: Makropoulou, Aristotelous 19-21, 501-503.

Fig. 144 19-21 Aristotelous Street, plan of the excavation.

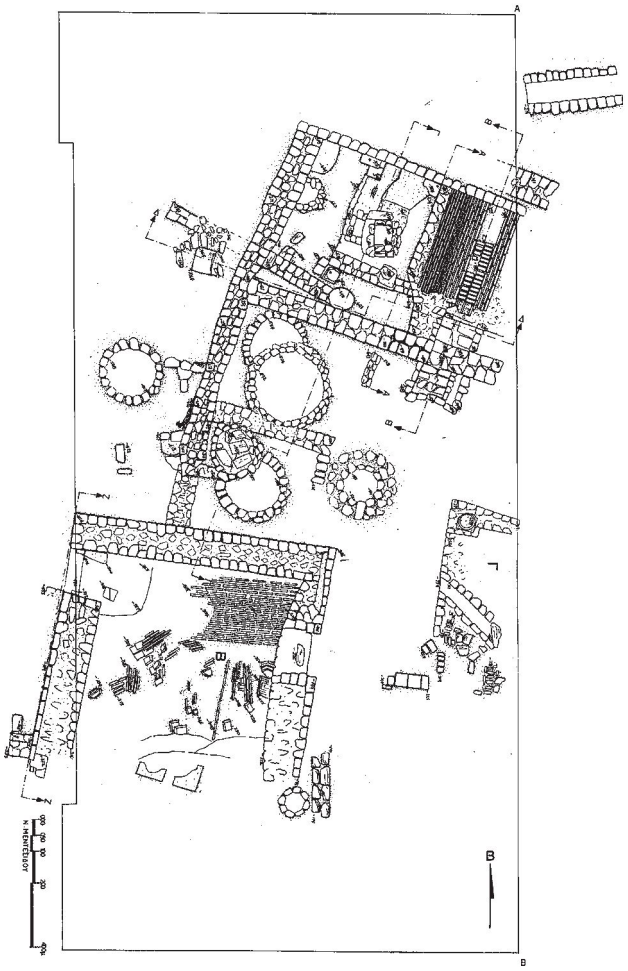




Fig. 145 19-21 Aristotelous Street, pottery stilts.

30 **figs 146-160**

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: West end (**map:** 10h)
Address: 28 Phrangōn Street
Date: Thirteenth to fifteenth centuries
Description: Remains of a Late Byzantine pottery producing glazed bowls were found during salvage excavations at the site. Also found were, what appear to be, unfinished white protomajolica vessels. Ruins of a Late Byzantine pottery were unearthed at the north-eastern corner of the excavation. They are constructed with flat, partly chiseled stones, bricks and mud as mortar (preserved length of 3.10 m to 7.70 m, width 0.60 m). A large number of Late, Early and Post-Byzantine glazed pottery sherds were collected from the area of the workshop. These were mainly glazed bowls and dishes, but also included some utilitarian and cooking vessels.

South-west of the workshop, a rubbish pit (10 m × 12 m × 0.60 m) filled with pottery sherds was discovered. Only a few plain sherds were found, almost all of them were defective glazed examples. Some of them bore engraved decoration on white slip without glazing, others had been overburnt and still had the stilts attached to them. More than 300 fragments with overburnt glazing were discovered. They comprise small and larger bowls, dishes and jugs. The following groups of decoration can be discerned: 1) those without engraved decoration, bearing shades of yellowish, greenish and brown-yellowish glaze; 2) those with engraved decoration executed with both narrow and wide strokes in the form of concentric circles, spirals, tendrils and rosettes; 3) a few fragments bearing painted decoration, consisting of spirals and tendrils. Fragments of finished vessels bearing the same decoration were located in the pit and all over the area of the workshop and have been identified as products of the workshop. According to the excavators, the fact that the workshop was located so close to the city's port is an indication of its importance and that its products were mainly intended for export.

Bibliography: Markē/Chatzēiōannidēs, Phrangōn 28, 273-280 esp. 277-280.

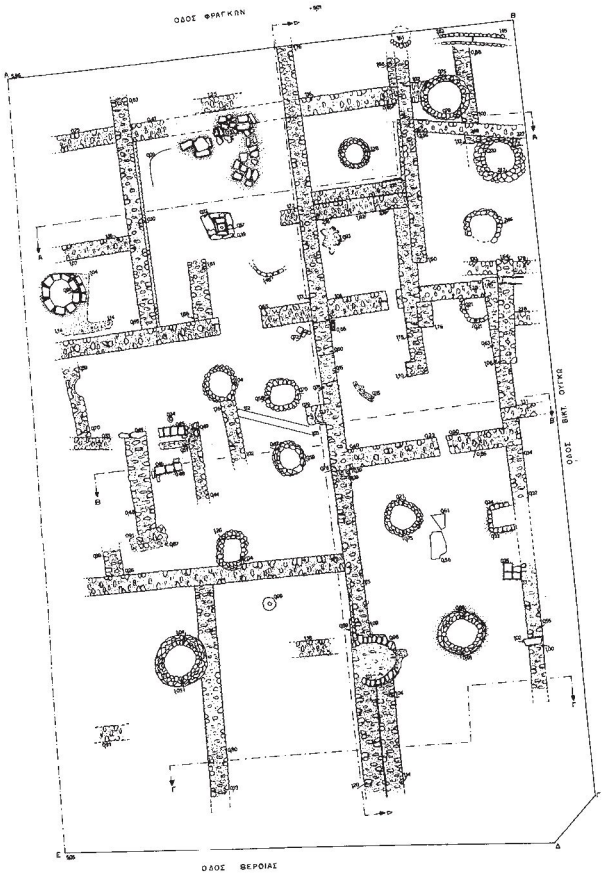


Fig. 146 28 Phrangōn Street, plan of the excavation.



Fig. 147 28 Phrangōn Street, general view of the excavation.



Fig. 148 28 Phrangōn Street, general view of the excavation.



Fig. 149 28 Phrangōn Street, groups of Late Byzantine glazed vessels.

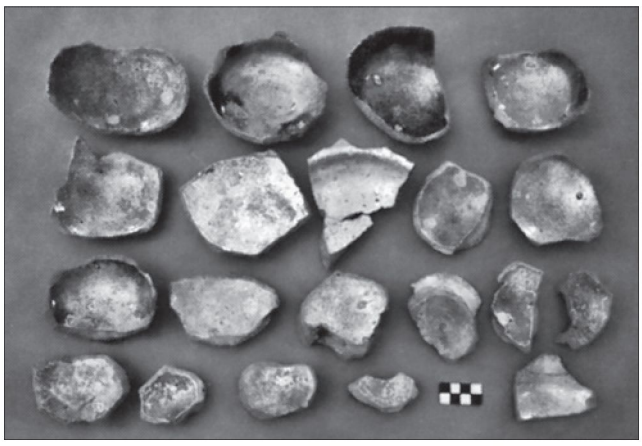


Fig. 150 28 Phrangōn Street, groups of Late Byzantine glazed vessels.

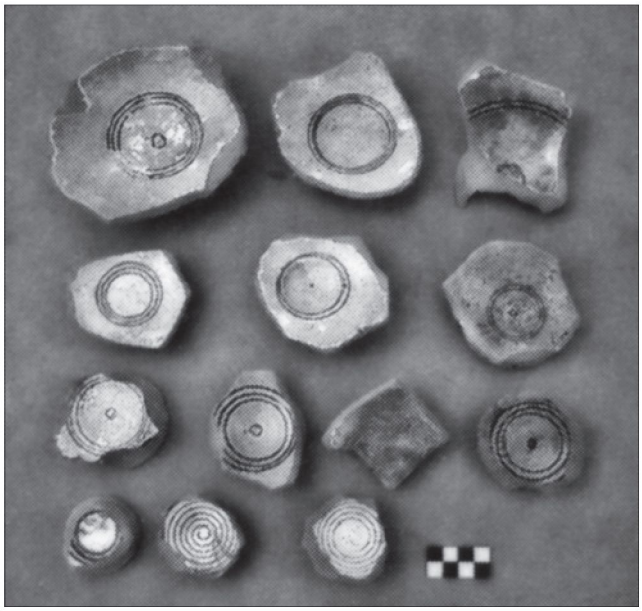


Fig. 151 28 Phrangōn Street, groups of Late Byzantine glazed vessels.

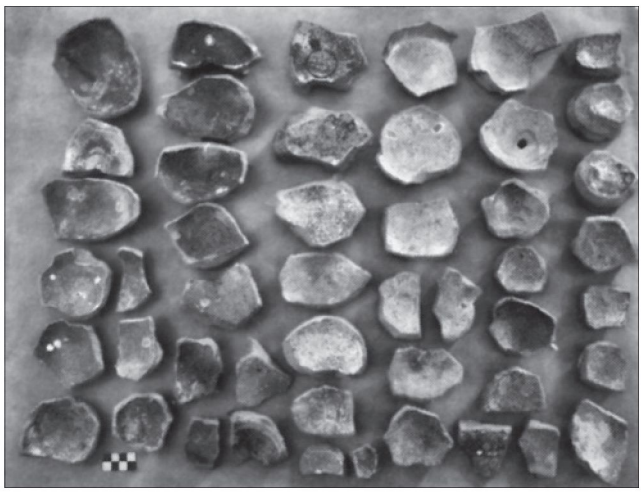


Fig. 152 28 Phrangōn Street, groups of Late Byzantine glazed vessels.



Fig. 153 28 Phrangōn Street, groups of Late Byzantine glazed vessels.



Fig. 154 28 Phrangōn Street, groups of Late Byzantine glazed vessels.



Fig. 155 28 Phrangōn Street, groups of Late Byzantine glazed vessels.



Fig. 156 28 Phrangōn Street, groups of Late Byzantine glazed vessels.

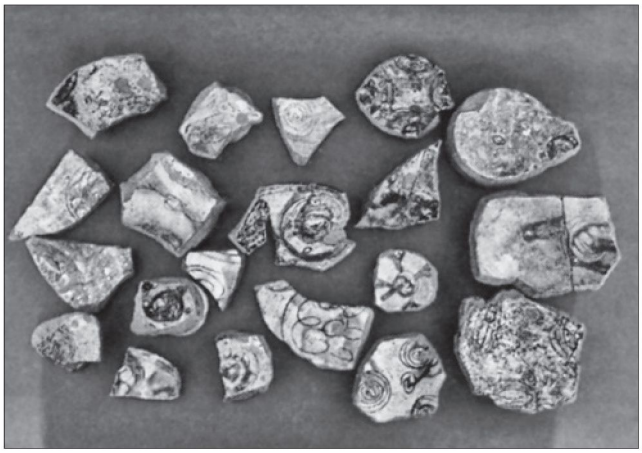


Fig. 157 28 Phrangōn Street, groups of Late Byzantine glazed vessels.



Fig. 158 28 Phrangōn Street, defective glazed vessels from the refuse pit.



Fig. 159 28 Phrangōn Street, defective glazed vessels from the refuse pit.



Fig. 160 28 Phrangōn Street, defective glazed vessels from the refuse pit.

31 fig. 161

Type: Ceramic workshop (vessels)

City: Thessaloniki

Area: Upper city, near the north-western city wall (**map:** 5h)

Address: 3 Eurymedontos Street

Date: Late Byzantine to Ottoman period

Description: A Middle Byzantine wall was attached to the enclosure of an Early Christian villa or monastery and was partly carved and covered with plaster in order to be used as part of a Middle or Late Byzantine workshop. Judging from the large number of pottery stilts that have been found on the site this was most likely a pottery.

Bibliography: Cat. Thessaloniki 2006, 5.

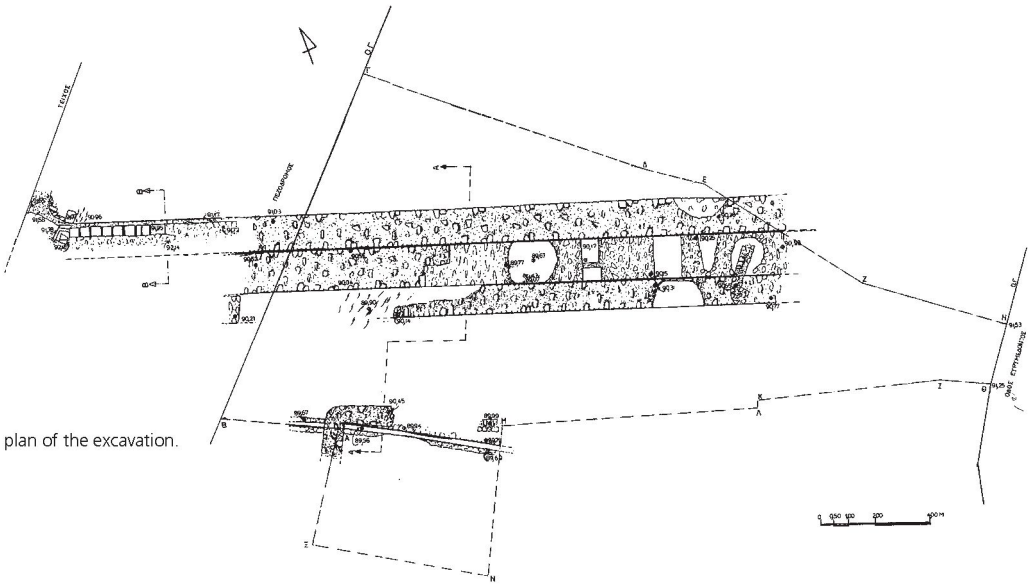


Fig. 161 3 Evrymedontos Street, plan of the excavation.

32 fig. 162

Type: Ceramic workshop (vessels)

City: Thessaloniki

Area: City centre (**map:** 8j)

Address: 67 Egnatia and G. Bakatselou Street

Date: Thirteenth century

Description: Sometime in the Middle Byzantine era, an open-air metallurgical workshop operated here in the ruins of a sixth-century public building. Discarded refuse and stilts from a Byzantine pottery, along with important twelfth to thirteenth-century pottery sherds, were found in a Byzantine period pit at this location, indicating the operation of the workshop in the area.

Bibliography: Markē, Provlēma anagnōsēs 455-462 esp. 457.

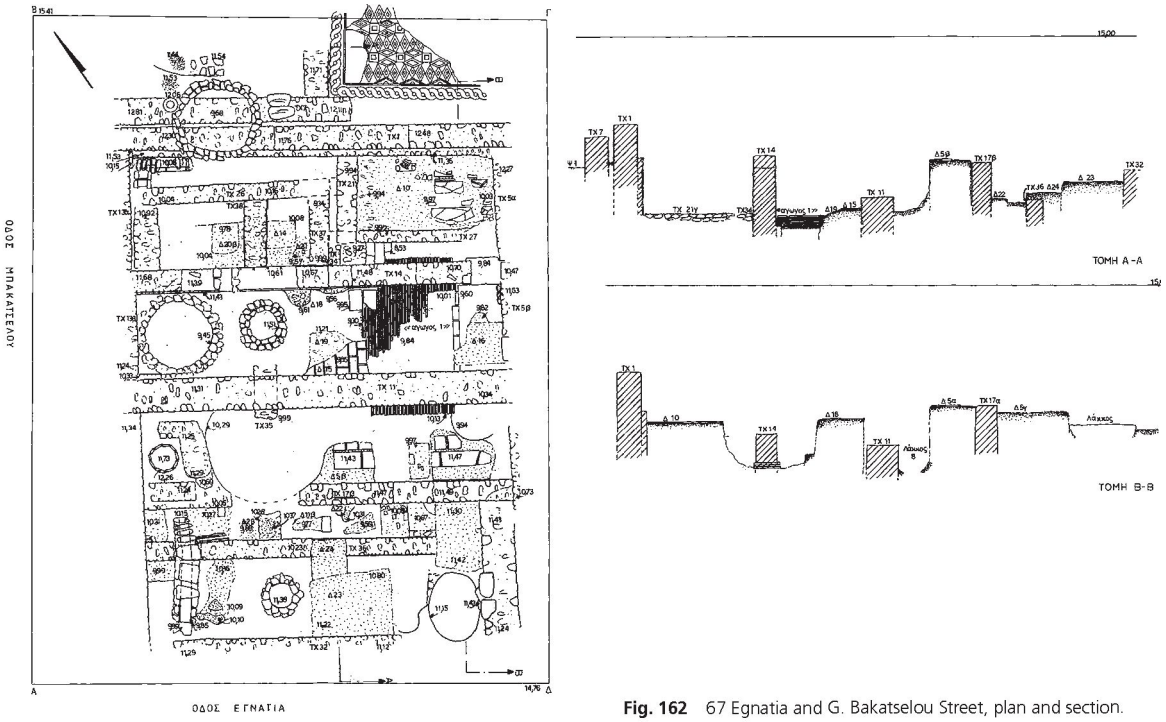


Fig. 162 67 Egnatia and G. Bakatselou Street, plan and section.

33 **figs 163-167**

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: East end (**map:** 6I)
Address: 30A K. Melenikou Street
Date: Late thirteenth to early fourteenth centuries
Description: Salvage excavations conducted at 30A K. Melenikou Street indicate that a Late Byzantine pottery was established here. It comprised two small, two-storey kilns with a central post for the support of the floor of the firing chamber, two circular pits and a mudbrick wall. One of the kilns is preserved almost completely (height 1.27 m, diam. 1.24 m), even five of the holes on the floor of the firing chamber survive. Around the kilns, a considerable quantity of stilts and unfinished vessels, bearing white coating but no glazing, was found. Among them, bowls inscribed with a bird pecking a tree were found, which are characteristic for late thirteenth to early-fourteenth-century Thessalonian crafts. The workshop continued to operate during the Ottoman period as seen from a hearth, a pavement coated with lime mortar, two shafts, a cesspit and two rubbish pits surviving from this phase. One of the kilns remains preserved in the basement of the new building. The site is adjacent to the eastern city wall where an Early Christian pottery operated.
Bibliography: Cat. Thessaloniki 2005, 6. – Markē, Sōstikes anaskaphes 216-217.

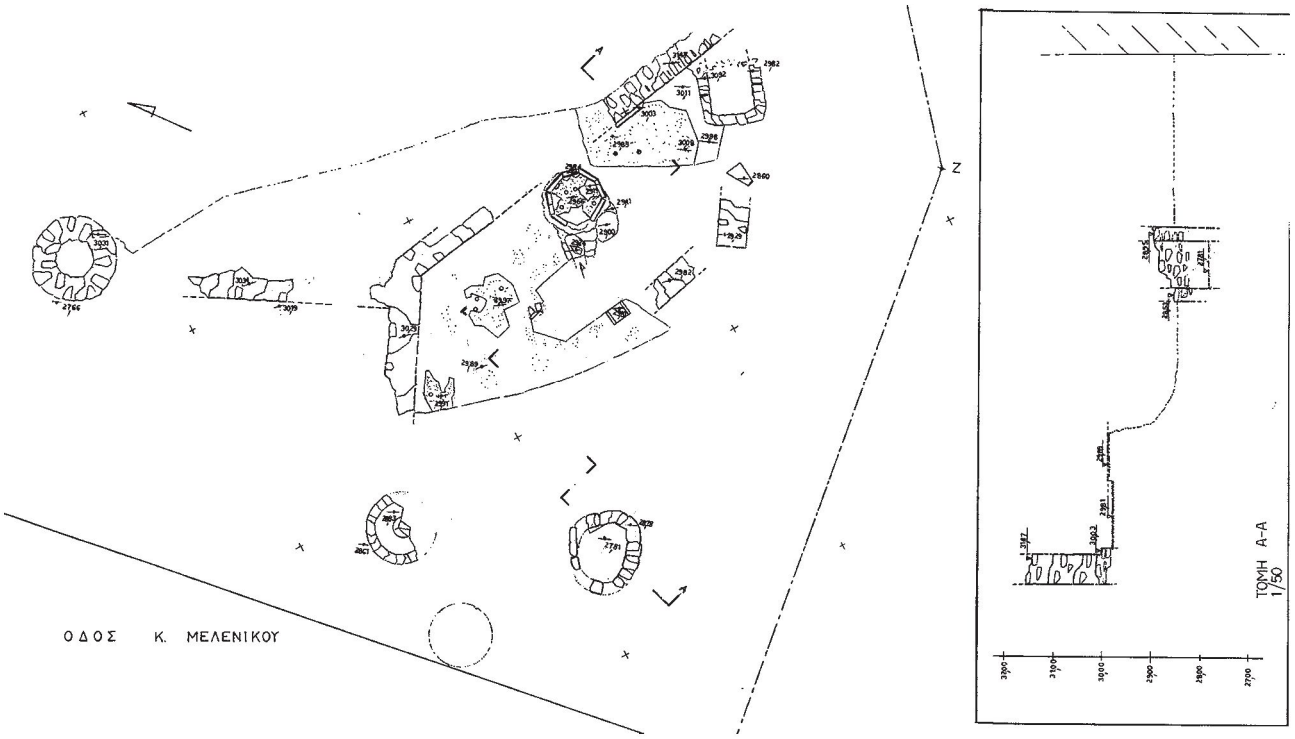


Fig. 163 30A K. Melenikou Street, plan and section of the excavation.



Fig. 164 30A K. Melenikou Street, view of the kiln.



Fig. 165 30A K. Melenikou Street, view of the kiln.



Fig. 166 30A K. Melenikou Street, general view of the excavation.



Fig. 167 30a K. Melenikou Street, unfinished clay vessels.

34 figs 168-169

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: East end (**map:** 5I)
Address: Olympiados Street, former Third Male Gymnasium's plot
Date: Thirteenth to fifteenth centuries
Description: Several immovable finds were discovered during salvage excavations conducted at the junction of Agiou Dēmētriou and Olympiados Streets, close to the eastern city wall. The finds are mainly a few Late Roman, Middle and Late Byzantine pottery sherds. In addition, three pottery stilts along with Late Byzantine glazed pottery sherds found here indicate the presence of a pottery in the area.
Bibliography: Cat. Thessaloniki 2002, 10.



Fig. 168 Olympiados, former Third Male Gymnasium's plot, general view of the excavation.

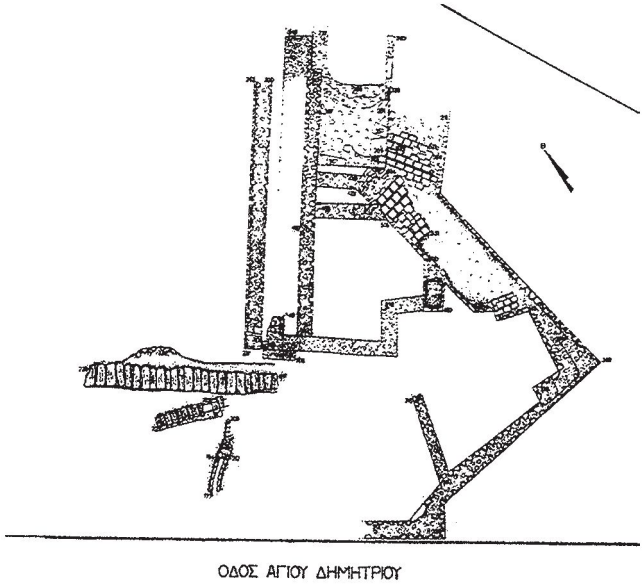


Fig. 169 Olympiados, former Third Male Gymnasium's plot, plan.

35 figs 170-177

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: East end (**map:** 7I)
Address: D. Gounarē and Vasou Street (today 47 D. Gounarē Street)
Date: Late Byzantine to Ottoman

Description: On the site of a large, probably public, Roman building, on top of which Byzantine walls were found, an Ottoman workshop producing glazed pottery was found. The relevant finds comprise nine pits, five of which were lined with stone masonry, used for the disposal of the workshop's refuse. One of the pits, in the south-western part of the site, was assumed to be a kiln due to its special typology.

Bibliography: Souvereph, Gounarē-Vassou 350-354 esp. 354.

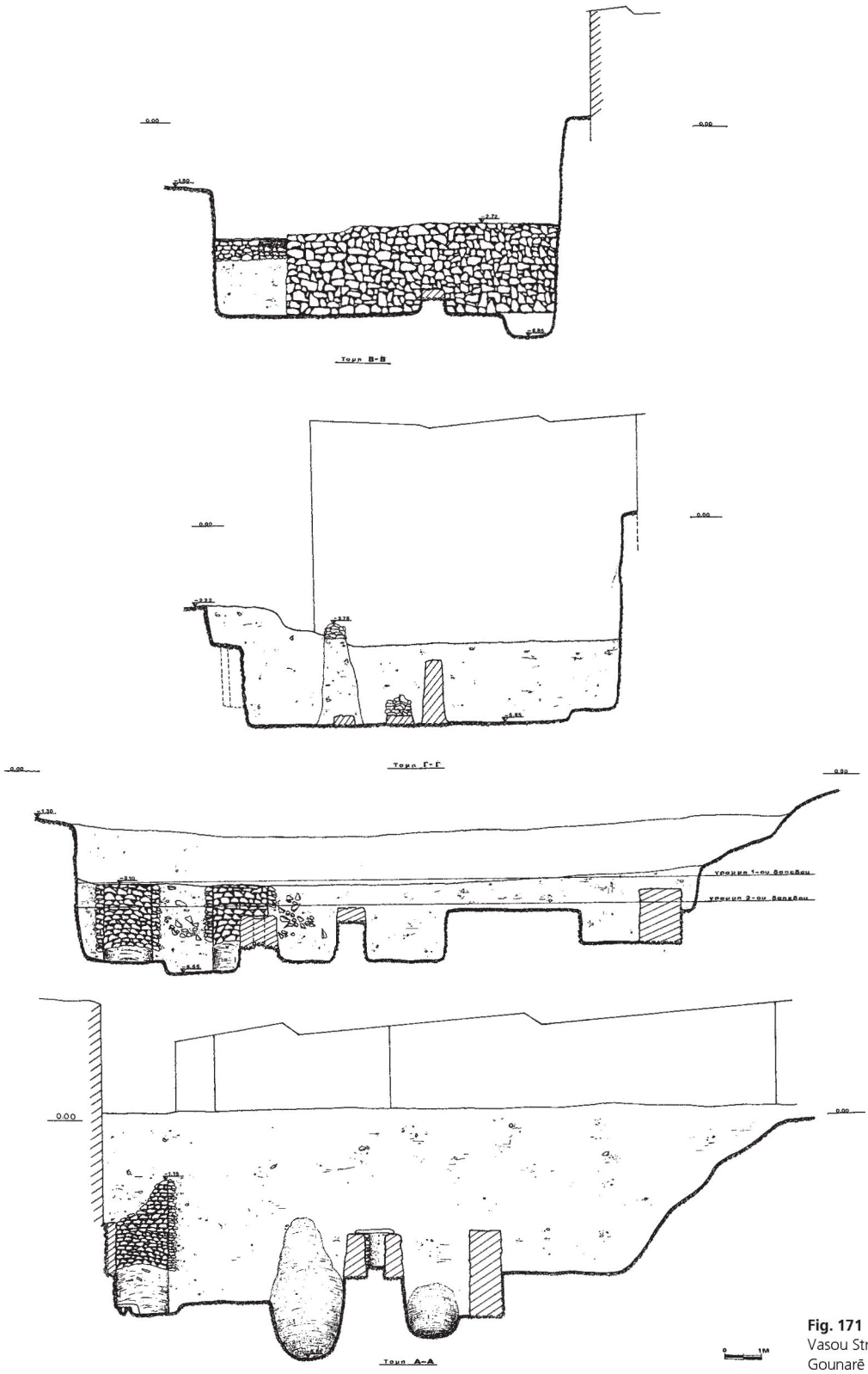


Fig. 171 D. Gounarē and Vasou Streets (today 47 D. Gounarē Street), section drawings of the excavations.

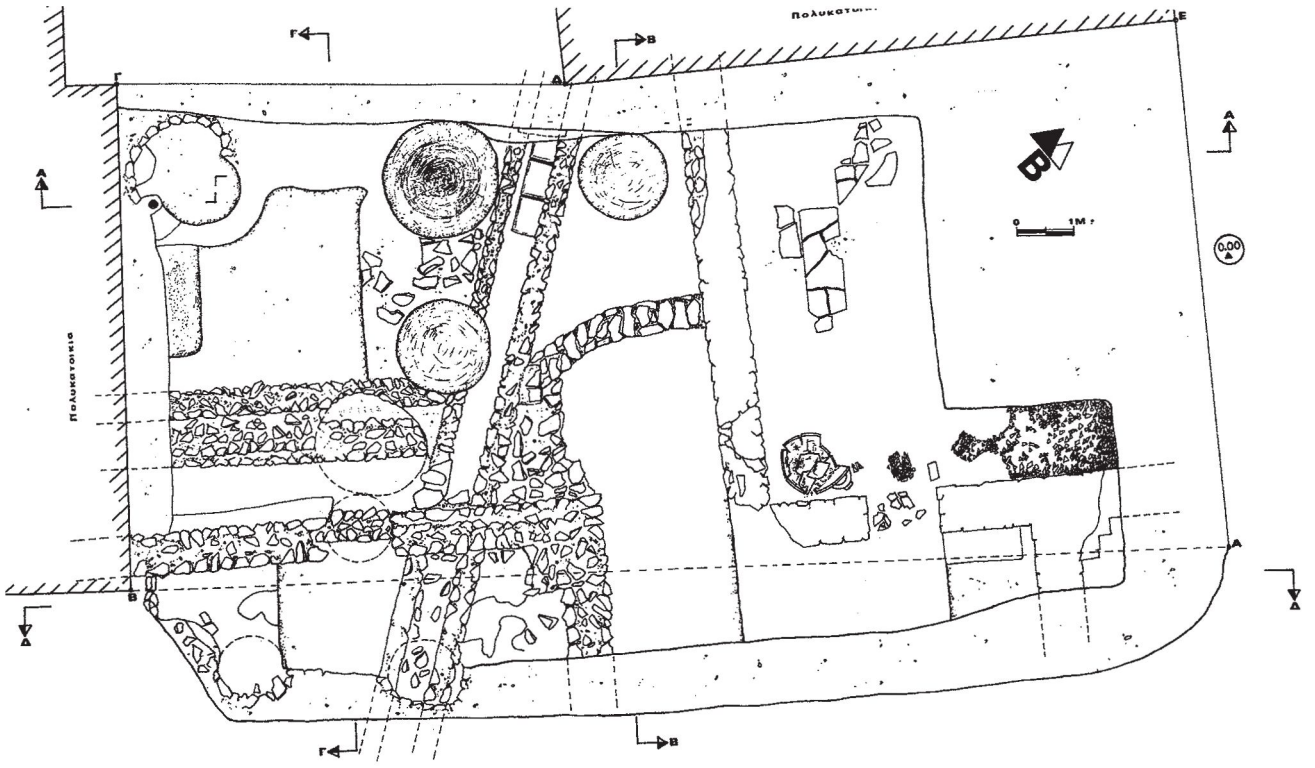


Fig. 170 D. Gounarē and Vasou Streets (today 47 D. Gounarē Street), plan of the excavation.



Fig. 172 D. Gounarē and Vasou Streets (today 47 D. Gounarē Street), general view of the excavation.



Fig. 173 D. Gounarē and Vasou Streets (today 47 D. Gounarē Street), general view of the excavation.



Fig. 174 D. Gounarē and Vasou Streets (today 47 D. Gounarē Street), deformed, unfinished vessel.



Fig. 175 D. Gounarē and Vasou Streets (today 47 D. Gounarē Street), deformed, unfinished vessel.



Fig. 176 D. Gounarē and Vasou Streets (today 47 D. Gounarē Street), deformed, unfinished vessel.



Fig. 177 D. Gounarē and Vasou Streets (today 47 D. Gounarē Street), deformed, unfinished vessel.

36 **fig. 178**

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: West end (**map:** 9f)
Address: 7 Zephyrōn Street
Date: Late Byzantine
Description: A fifth-century metal workshop, the base of a fifth-century monumental octagonal church and some pottery stilts were found during salvage excavations above a Roman or Early Christian house. The stilts indicate the operation of a Late Byzantine pottery in the area.
Bibliography: Markē, Zephyrōn 7, 586-587 figs 11-12. – Cat. Thessaloniki 2001, 7.



Fig. 178 7 Zephyrōn Street, clay stilts.

37 **figs 179-182**

Type: Ceramic workshop (vessels)
City: Thessaloniki
Area: East end (**map:** 8m)
Address: 1 Ippodromiou and Manousogiannakē. Plateia Ippodromiou, on the plot of Agiōn Kōnstantinou kai Elenēs Church
Date: Late Byzantine
Description: Salvage excavations were conducted in 1972 prior to the building of the Church of Hagioi Kōnstantinos and Elenē at the south-east section of the Roman Hippodrome at the junction of Ippodromiou Street and Manousogiannakē Street. Here, a Late Byzantine or Early Ottoman cemetery was discovered and dated to sometime between the fourteenth and sixteenth centuries. Among the finds from the site were a few pottery stilts, indicating the operation of a Late Byzantine pottery in the area.

Bibliography: On the excavation of the site, see Alexandrē, Ippodromiou 1 kai Manousogiannakē 656-658. – On the clay finds from the site, see Vavylopoulou-Charitonidou, Céramique d'offrande 209-226. – On some of the glass finds from the site, see Antonaras, Two Venetian Vessels 37-40. – Antonaras, Venetian Glass Pilgrim Vessels 199-202.

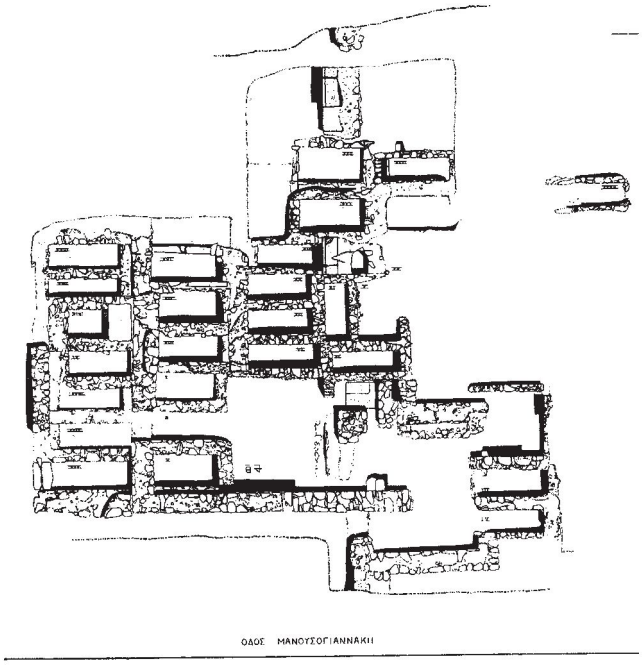


Fig. 179 1 Ippodromiou and Manousogiannakē Street, plan of the excavation.

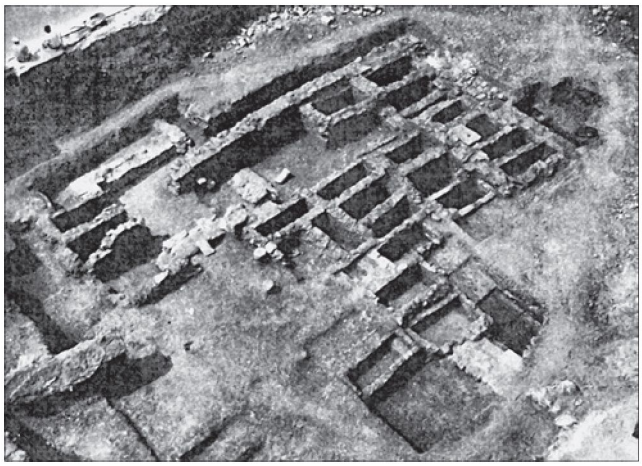


Fig. 180 1 Ippodromiou and Manousogiannakē Street, general view of the excavation.



Fig. 181 1 Ippodromiou and Manousogiannakē Street, pottery stilts.



Fig. 182 1 Ippodromiou and Manousogiannakē Street, pottery stilts.

38 fig. 183

Type: Ceramic workshop (probably for vessels)
City: Thessaloniki
Area: City centre, seafront (**map:** 10I)
Address: 59 Leōphoros Nikēs – Chrysostomou Smyrnēs – Proxenou Koromēla
Date: Modern, probably nineteenth century
Description: After the demolition of the city wall in 1876, the site was covered with mortar and on the west profile of the dig remains of a pottery kiln were visible; copper oxides and refuse from the pottery were found in the fill.
Bibliography: Cat. Thessaloniki 2002, 14.

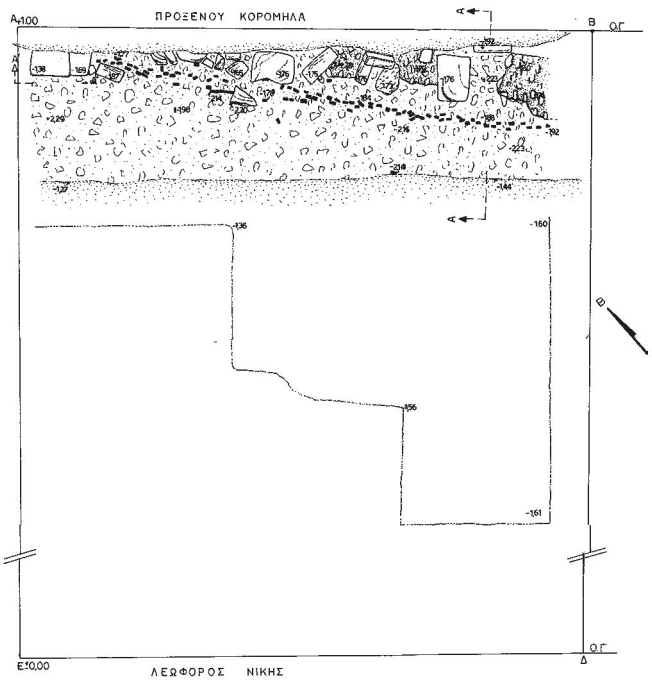


Fig. 183 59 Leōphoros Nikēs – Chrysostomou Smyrnēs – Proxenou Koromēla Street, plan and section of the excavation.

39 **figs 184-186**

Type: Ceramic workshop (lamps)

City: Thessaloniki

Area: Eastern Necropolis (**map:** 7m)

Address: Department of Theology, Aristotle University of Thessaloniki

Date: Third to fourth centuries

Description: A rectangular building was excavated above and among burial sites during excavations preceeding the building of the Aristotle University Theological Department in 1965. This was identified by the excavator as a »warehouse«. Several construction phases of the building have been established. It was dated, at least partly, to the Early Byzantine era, as its walls rested on graves largely datable to the tetrarchic period and a few of them to the reign of Justinian I. Clay moulds for clay lamps, which can be dated to between the second half of the third century and the end of the fourth century, were found embedded in the warehouse walls. In conjunction with the clay vessels and clay water pipes found on-site, the excavator was led to the assumption that it was a commercial building situated near or on the site of a clay lamp workshop. From the eastern necropolis, possibly from the same excavation, comes another clay mould for a clay lamp that can be dated to the end of the fourth century[557].

Bibliography: Petsas, Theologikē Scholē 336-339 pl. 347β, 356α, γ, ε. – Antōnaras, Rōmaïkē kai palaiochristianikē yalourgia 72, nt. 67 on the moulds and their parallels.

557 Cat. Thessaloniki 1986b, 22 no. 7.

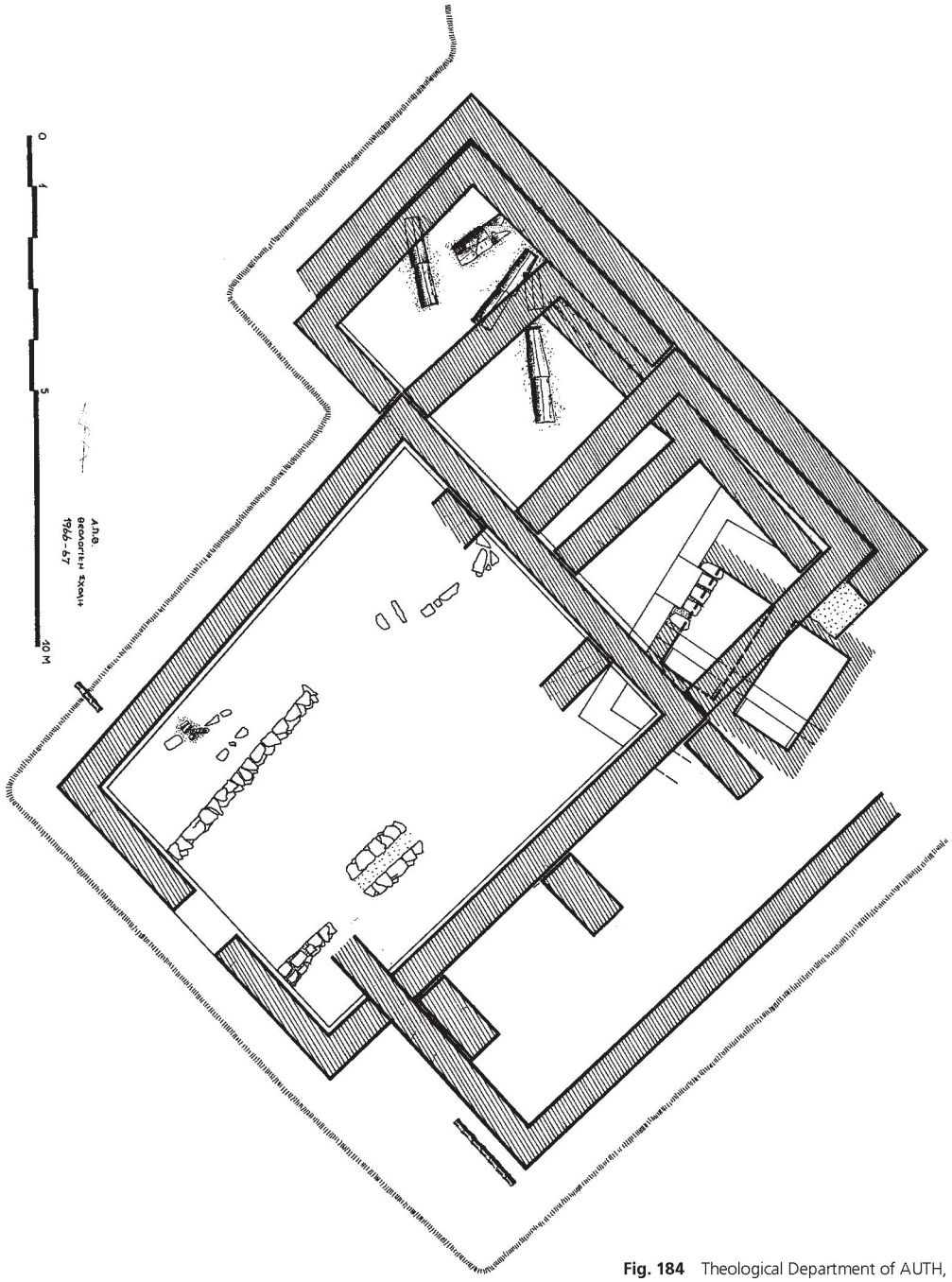


Fig. 184 Theological Department of AUTH, plan.



Fig. 185 Theological Department of AUTH, general view of the excavation.



Fig. 186 Theological Department of AUTH, clay moulds and fragments of clay lamps.

40 **figs 187-188**

Type: Ceramic workshop (lamps)
City: Thessaloniki, Xērokrēnē
Area: Western necropolis (**map:** 11a)
Address: Chrysospathē and Monachou Samouēl Street
Date: Fourth to sixth centuries
Description: In the city's western necropolis, on a site with burial complexes and individual graves dated to between the fourth and the sixth centuries, excavations at the north-western corner of a complex revealed clay lamp sherds, one mould for clay lamps and a clay sherd with a Christogram.
Bibliography: Cat. Thessaloniki 2002, 13.



Fig. 188 Chrysospathē and Monachou Samouēl Street, general view of the excavation.

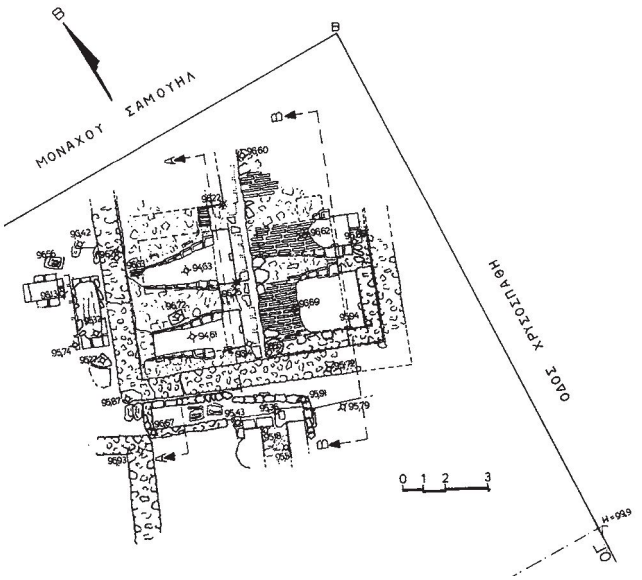


Fig. 187 Chrysospathē and Monachou Samouēl Street, plan of the excavation.

41 **figs 189-193**

Type: Ceramic workshop (lamps)
City: Thessaloniki
Area: City centre (**map:** 8i)
Address: Ancient Agora
Date: Late first century BC to first century AD; late third to early fourth centuries
Description: More than 3,000 clay lamps were found during excavation of the Agora, dating from the Hellenistic period to the sixth or seventh centuries AD. Five large lamps – all identical and unused – and a mould found in the Agora's plaza are taken as evidence of late first-century BC local production. Fragments of lamps made in the same mould were found in the southern part of the square in a late first-century BC to first-century AD layer. This layer included workshop detritus, e.g. moulds for clay figurines, and so may suggest that the lamps were produced locally, possibly using imported moulds. At least three clay-lamp moulds were unearthed in the area of the Odeion in the Agora, dating from between the late third century to the fifth century: 1) the rim of the disc from an almond-shaped lamp and the mould of its upper part, originally dated to the third century AD. This is identical to a lamp that was found in the Agora of Athens and it is indicative either of the trade in moulds or of the faithful replication of Athenian prototypes by a local workshop (**figs 189, 190**); 2) part of the mould of a lamp's upper part decorated with a raised rosette with pointed leaves (**fig. 191**); and 3) part of the mould of a lamp's upper part decorated with relief ribs between grooves and raised dots (**figs 192-193**).
Bibliography: Adam-Velenē, Lychnoi 192-193, 202 no. 85 fig. 2. – Adam-Velenē et al., Archaia Agora, 501-531 esp. 505-510 figs 9α-γ-10α-γ. – Geōrgakē/Zōgraphou, Strōmatographia 65-86 esp. 65-66. – Kalavria/Bolē, Strōmatographia 39-64 esp. 59. – Adam-Velenē, Lychnoi, 185-207 esp. 192-193, 202 no. 85 fig. 2. – Velenēs/Poulou-Papadēmētriou/Zachariadēs, Lychnaria. – Velenis/Zachariadis, Lamps from Thessaloniki's Agora 185-210.



Fig. 189 Ancient Agora, clay mould for a clay lamp.



Fig. 190 Ancient Agora, clay mould for a clay lamp.





Fig. 191 Ancient Agora, clay mould for a clay lamp.



Fig. 192 Ancient Agora, clay lamps and a clay mould.

42 figs 194-195

Type: Ceramic workshop (figurines)
City: Thessaloniki
Area: Eastern Necropolis (**map:** 7n)
Address: North Gate of HELEXPO
Date: First century
Description: Architectural remains relating to artisanal activity were found among several third and fourth-century graves, namely: 1) a rectangular medieval cistern (7.5 m × 5.5 m, max. preserved height 1 m) and part of the clay pipe that supplied the cistern with water – fourth and fifth-century bronze coins were found in the cistern; 2) a lime pit (diam. 1 m) containing lime residue; 3) remains of a possibly first-century clay-figurine workshop, comprising a room (2 m × 1 m) covered with a thick layer of the remains of the workshop's destruction by fire. A large number of identical clay figurines of animals, such as dogs, bulls and a cockerel, along with a first-century clay lamp were discovered.
Bibliography: Trakosopoulou, Chōros DETH 555-556 pl. 213. – Trakosopoulou, Anaskaphē DETH 208 illus. 1 fig. 2. – On the pottery of the plot, see Pantē, Keramikē 466-485.





Fig. 193 Ancient Agora, clay mould for a clay lamp.

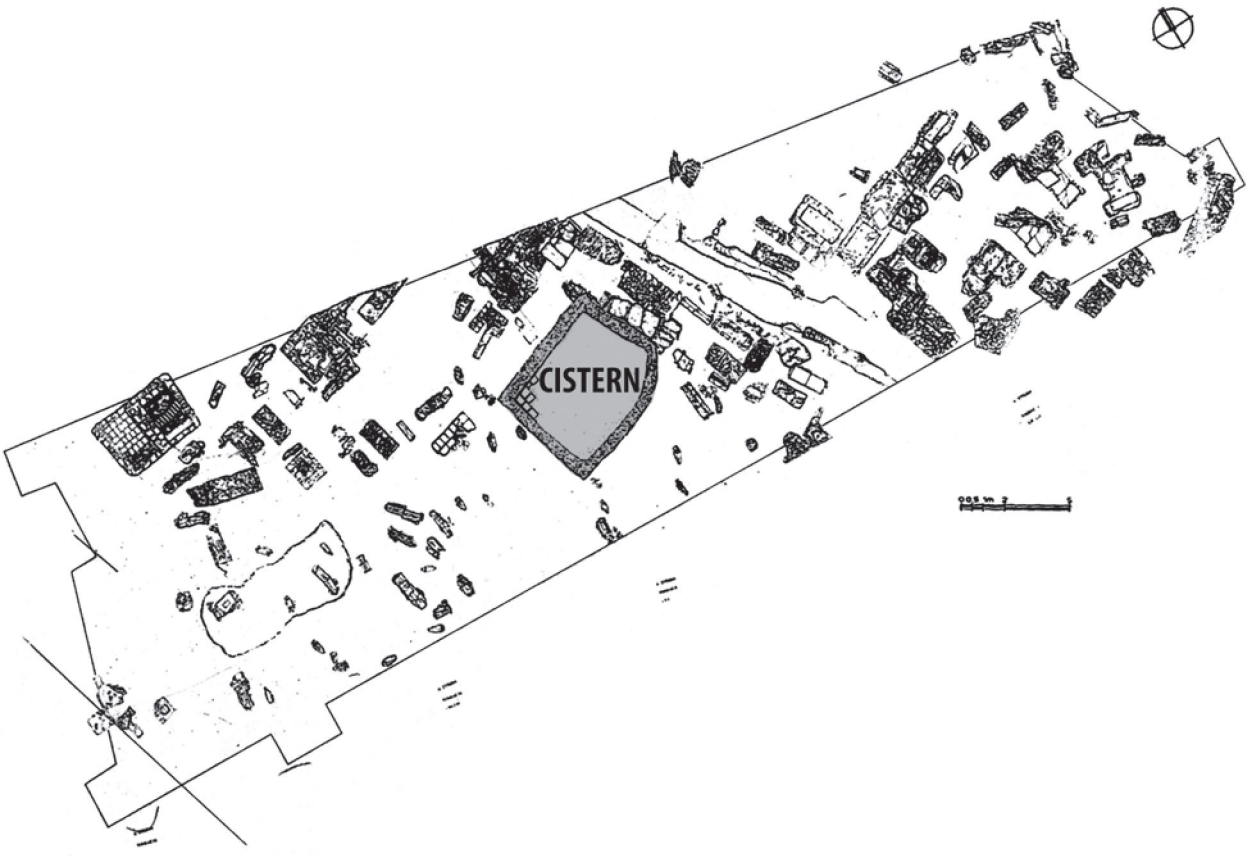


Fig. 194 North Gate of HELEXPO, plan of the excavation. The cistern is highlighted.



Fig. 195 North Gate of HELEXPO, general view of the excavation.

43 **figs 196-199**

Type: Ceramic workshop (figurines)
City: Thessaloniki
Area: City centre (**map:** 8i)
Address: Ancient Agora
Date: Third, second and first centuries BC; first century AD
Description: More than 1,500 figurines, almost all of them in a fragmentary condition, were found in the Agora, predominantly in the area of the open plaza. They mostly depict female figures with only a few male ones. The most numerous group among the figurines are those of goddesses and gods, with fewer representations of mythological beasts, animals and buildings. Parts of moulds representative of all types and especially of the Mother of the Gods are preserved. Their fragmentary condition complicates their dating, especially as similar types appear from Hellenistic to Roman times. However, some do bear clearly Augustan characteristics (**fig. 196**). Furthermore, at the southern end of the square, in a layer datable to the transition from the first century BC to the first century AD, clay moulds for clay figurines were discovered, along with clay lamps made in the same mould.
A considerable number of clay figurines were found in the area of the eighth shop of the commercial street on the southern side of the Agora. Furthermore, the presence of a large number of clay moulds for the production of clay figurines, in conjunction with the pits and post holes opened in sterile soil, along with a large quantity of raw clay remains, indicates artisanal activity in this area at the end of the middle Hellenistic period. These early artisanal facilities were housed in makeshift pole-supported structures. Finally, many fragments of clay figurines along with their clay moulds were found in a workshop pit dug in sterile soil outside the Agora in the *insula* south of the southern commercial street.

Bibliography: Adam-Velenē, Lychnoi 185-207 esp. 192-193. – Adam-Velenē et al., Archaia Agora 501-531 esp. 519-521 figs 16α-β-17α-β. – Bolē/Skiadaressēs, Strōmatographia 87-104 esp. 90 fig. 9, 10 nt. 11 in p. 104. – Valavanidou, Ergastēriakes chrēseis 119-130 esp. 120. – Geōrgakē/Zōgraphou, Strōmatographia 65-86 esp. 65. – Zōgraphou, Megalē Mētera esp. 81-83. – A wide selection of moulds is exhibited in the Museum of the Ancient Agora.



Fig. 196 Ancient Agora, Hellenistic and Roman clay figurines.



Fig. 197 Ancient Agora, Hellenistic and Roman clay figurines.



Fig. 198 Ancient Agora, Hellenistic female figurine from the southern wing.

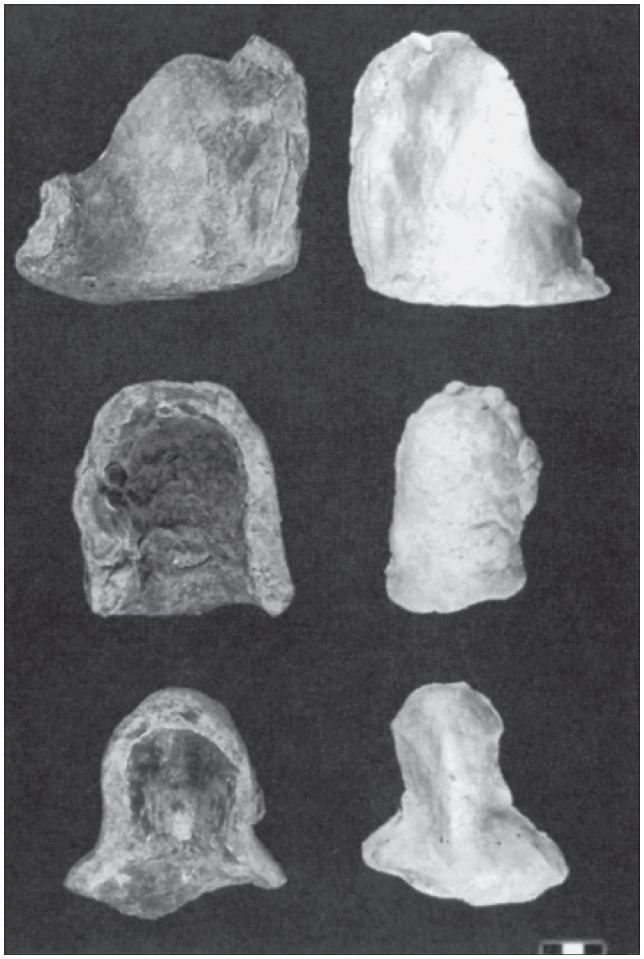


Fig. 199 Ancient Agora, moulds for figurines from the southern wing.

Metalworking

44 **figs 200-201**
Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 7k)
Address: 91 Philippou Street
Date: Hellenistic
Description: A large and luxurious house and a *nymphaion* with mosaic floors were unearthed in the *insula* surrounded by the streets Philippou, Dragoumē, Iordanidē and Arrianou. Two structural phases have been identified: the first one dated between the mid-third and mid-fourth century AD after the house's decorative murals; and the second one dated to between the middle of the fourth century and the early fifth century after numismatic evidence.
Many Hellenistic pottery sherds and the remains of a Hellenistic metallurgical workshop were found in deeper strata to the west of the *nymphaion*, at the eastern part of the site. At the north-western part, other remains of artisanal activity were also found, indicating the artisanal use of this area, a long time before the house was built on the site.
Bibliography: Pazaras, Nees toichographies 155-162. – Vokotopoulou, Nea Philippou 91, 362-364 illus. 2 pl. 213β, 214α-γ. – Vitti, Poleodomikē exelixē 229-232 nt. 115.

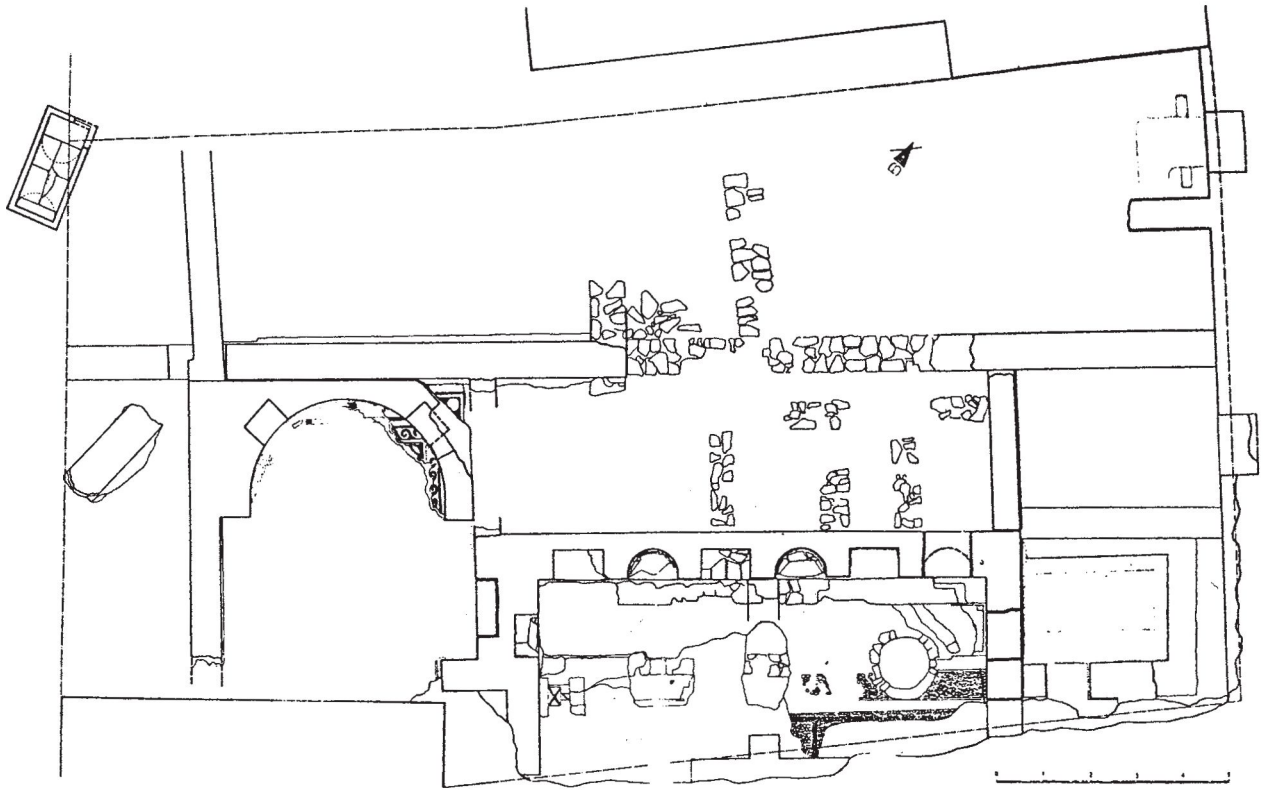


Fig. 200 91 Philippou Street, plan.



Fig. 201 91 Philippou Street, general view.

45 **figs 109-110, 202-204**

Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 9I)
Address: Nauarinou Square, Galerius' complex
Date: Second or first century BC to the first century AD
Description: A metallurgical workshop operated in the period between the second or first century BC and the first century AD in the artisanal complex that was discovered under the palace of Galerius. A horseshoe-shaped clay kiln (**cat. no. 15**) found under the mosaic floor of the north *stoa* of the complex was used for firing moulds for metal objects. Successive layers of moulds for casting statues were found in the firing chamber, the fire-tunnel and the wider area. Bronze residue was found within them. A considerable number of glazed bronze masses were also found in the same place. This kiln was the heart of an extended artisanal complex that included a workshop for processing metals, a pottery and a dyeworks. All these are dated to between the second or first century BC and the first century AD.
Bibliography: Karamperē / Christodoulidou / Kaïafa, To anaskaphiko ergo 533-534 fig. 3.



Fig. 202 Nauarinou Square, Galerius' palace, view of the kiln on the northern *stoa*.

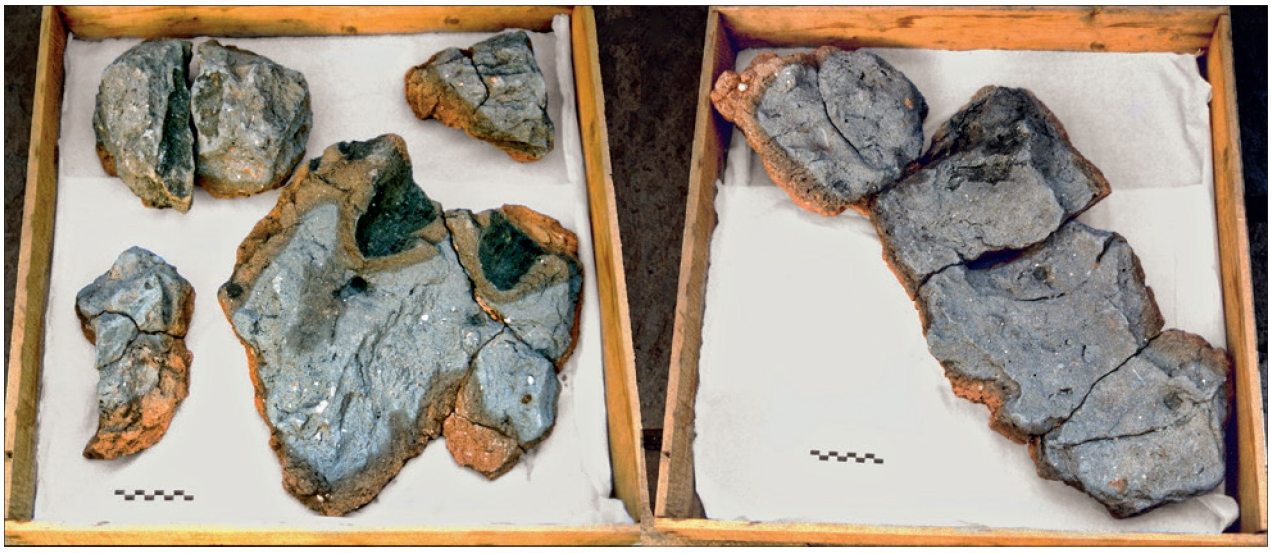


Fig. 203 Nauarinou Square, Galerius' Palace, clay moulds for metal objects, probably statues.



Fig. 204 Nauarinou Square, Galerius' Palace, clay moulds for metal objects, probably statues.

46 **fig. 205**
Type: Metalworking
City: Thessaloniki
Area: East end ⟨**map:** 7I⟩
Address: 2 L. Iasonidou Street
Date: Early fourth century
Description: Remains of a workshop, probably for processing metals, were found in the north-western part of the site. The finds comprise a kiln and two water pipes made with rubble and stone that traverse the site from N-W to S-E. Their floor is made of bricks marked with »X«-shaped lines of fingerprints, characteristic for the period of the Tetrarchs. Some mud-mortar walls preserved on the site also belong to the workshop. The workshop was found in an early fourth century layer, and it operated apparently until the late fourth or early fifth century. In the fifth century, one public and one private building, sharing the same courtyard, were built on the site. At the site, a workshop with water installations of undetermined use operated sometime between the tenth and the fifteenth centuries ⟨**cat. no. 96**⟩.
Bibliography: Markē, Iasonidou 2, 515-517.

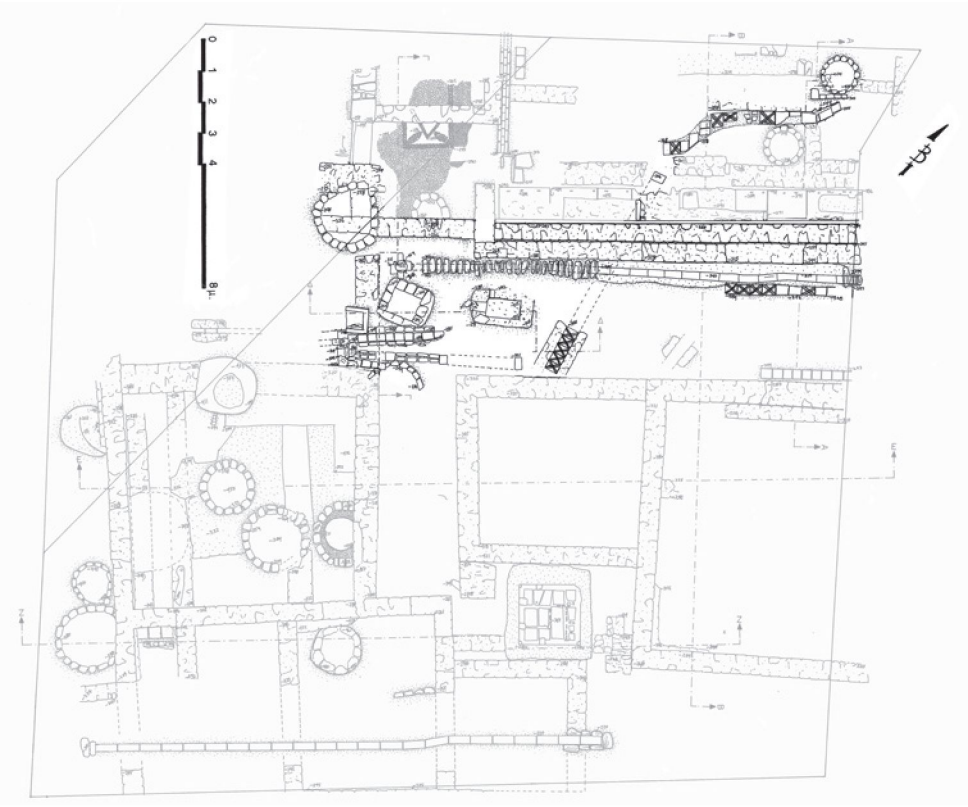


Fig. 205 2 L. Iasonidou Street, plan of the excavation.

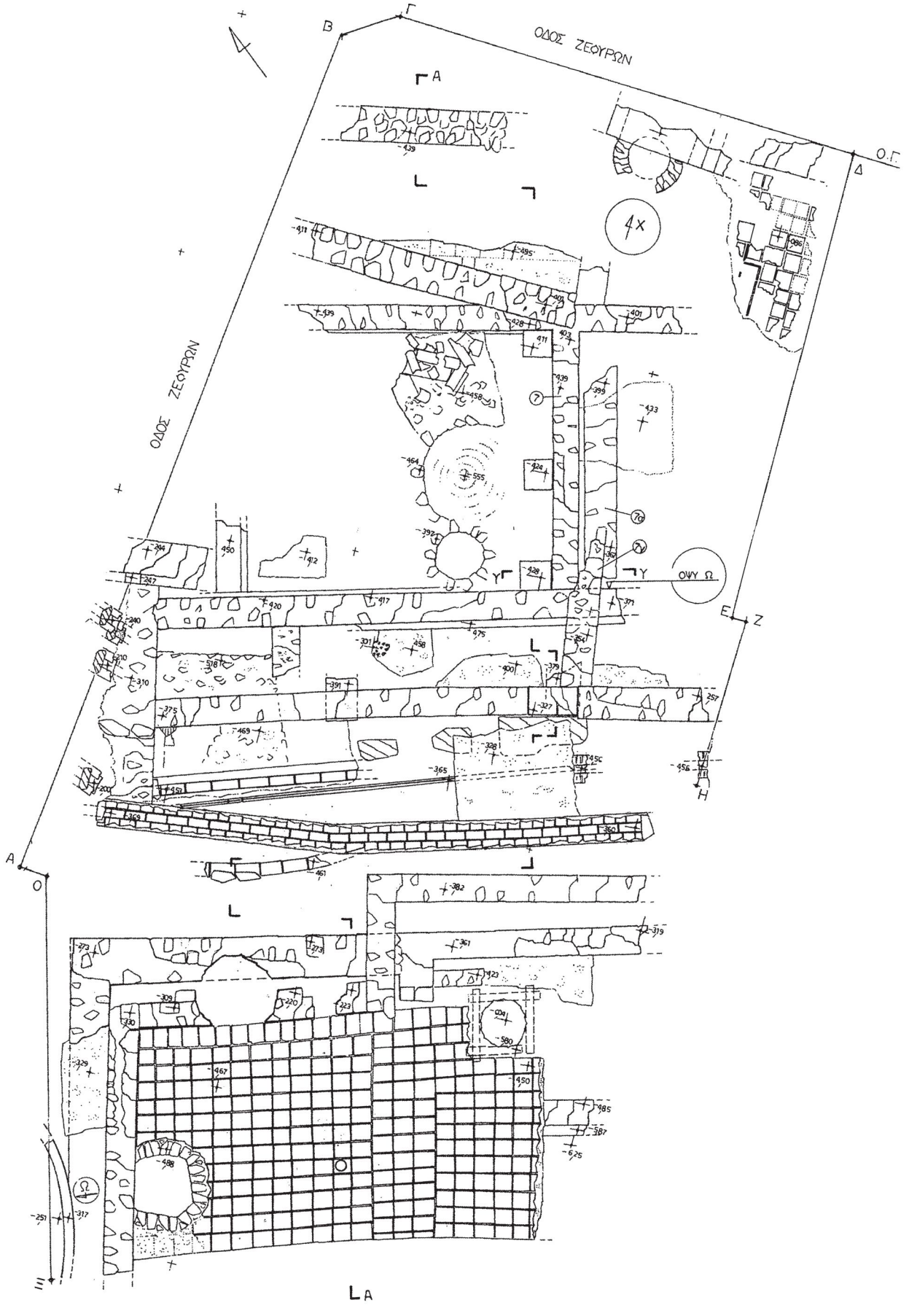


Fig. 206 7 Zephyrōn Street, plan of the excavation.

47 **figs 206-208**

Type: Metalworking

City: Thessaloniki

Area: West end (**map:** 9f)

Address: 7 Zephyrōn Street

Date: First half of the fifth century

Description: Several finds were made during salvage excavations at this site, lying north of the Chrysē Gate and close to the western city wall in the first *insula* on the first *decumanus* street to the north of the *Decumanus Maximus.* 1) A house built in the Roman Imperial period, comprising at least three large rooms opening onto a central square atrium. The eastern room was decorated with wall paintings imitating marble incrustations, and had a mosaic floor. After the destruction of the house at the end of the fourth century, the ruins were used during the fifth century as a workshop for smelting and metal refining, and probably also for the production of metal objects. A clay well-like kiln for smelting metals was found here. Flat, stone grinders and metalworking tools were also found on the site. 2) An Early Christian lead water pipe with the stamped inscription ΦΙΛΟΔΕΣΠΟΤΟΥ was found under the street on which the Roman house was built (**fig. 11**). 3) Several murex shells were found in a part of the street which was used along with the court of the workshop for depositing building materials. The ruins of the house and workshop were buried by the foundations of the monumental octagonal church that was built adjacent to the site (N-W corner) in the fifth century.

Bibliography: Markē, Zephyrōn 7, 586-587 figs 11-12. – Cat. Thessaloniki 2001, 7. – Raptēs, Ergastēria 82, 223.



Fig. 207 7 Zephyrōn Street, general view of the workshop.



Fig. 208 7 Zephyrōn Street, general view of the workshop.

48 **figs 209-211**
Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 8j)
Address: Egnatia Street, Agias Sophias Metro Station excavation

Date: Late Roman/Early Christian period
Description: A circular kiln (diam. 1.25 m), built with bricks, was unearthed during the salvage excavations at the site of Agias Sophias Metro Station. In the kiln, slag and some stone and metal tools were found.
Bibliography: Paisidou/Vasiliadou/Tzevrenē, METRO 260-262.



Fig. 209 Egnatia Street, Agias Sophias Metro Station excavation, the Roman and Early Byzantine *Via Regia*.



Fig. 210 Egnatia Street, Agias Sophias Metro Station excavation, view of a Late Roman kiln.



Fig. 211 Egnatia Street, Agias Sophias Metro Station excavation, view of a Late Roman building, probably a workshop.

49 figs 212-216

Type: Metalworking (state mint)
City: Thessaloniki
Area: City centre (**map:** 7i)
Address: Ancient Agora
Date: Fourth to fifth centuries
Description: Among the other public and official activities located in the Agora, e. g. the city's archives, it has been proven that the city's mint was also here, at the northernmost part of the Agora's eastern wing. The evidence for this comes from four metal kilns found north of the Odeion on the forum's eastern wing. In one of the kilns, parts of at least sixteen moulds for coin blanks were found.

One of the kilns (kiln A) was found on the eastern side of the southern walkway of the mint and only its base is preserved. It was rubble-built on a square ground plan and circular inside (diam. 1.20 m). The fire-tunnel was orientated to the west. Only four of the pilasters that supported the floor of the firing chamber survive, being those adjacent to the walls of the kiln.

Mid-fourth-century bronze coins were found in front of the kiln indicating its period of use.

The second kiln (kiln B) was found in the first room north of the Odeion. It was brick-built with two straight sides and an elliptical wall facing the opening, which was most probably placed on the east side. This part of the kiln was later destroyed during the construction of a lime pit. Traces of bronze smelting were detected in this kiln, probably remains of the casting of the coin blanks for the mint.

Bibliography: Velenēs, To nomismatokopeio 49-60. – Valavanidou, Ergastēriakes chrēseis 119-130. – Phōtiadou, Pēlines mētres kopēs nomismatōn 183-194.

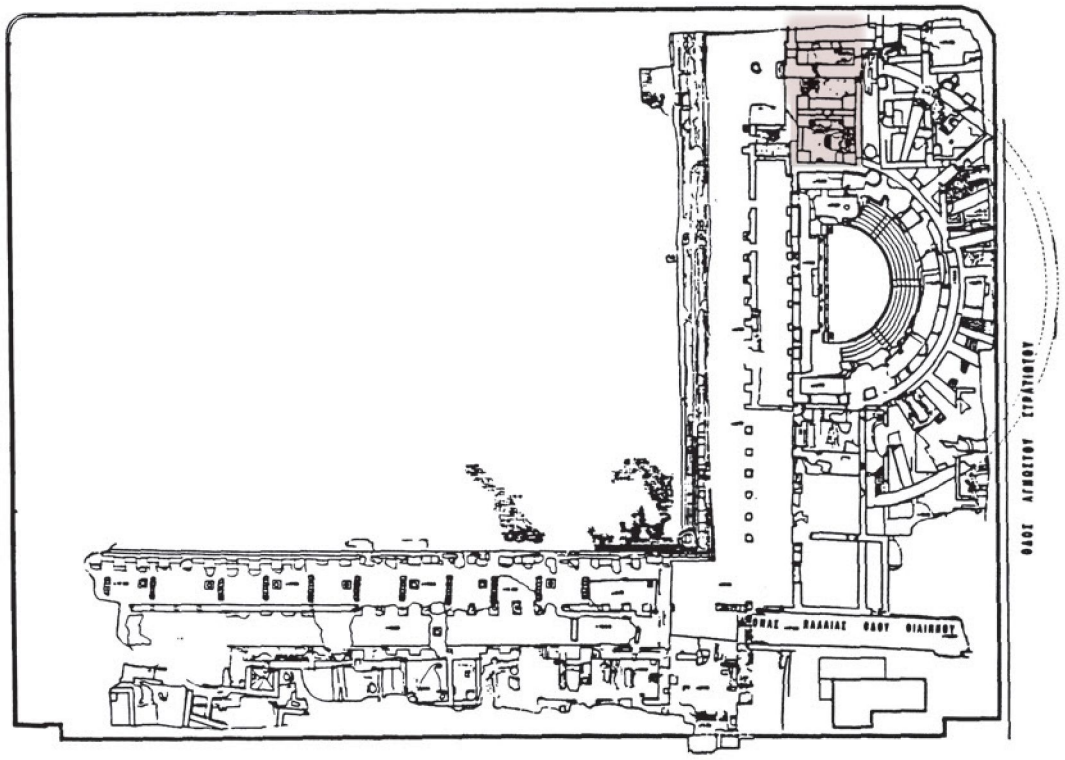


Fig. 212 Ancient Agora, plan with the mint marked.

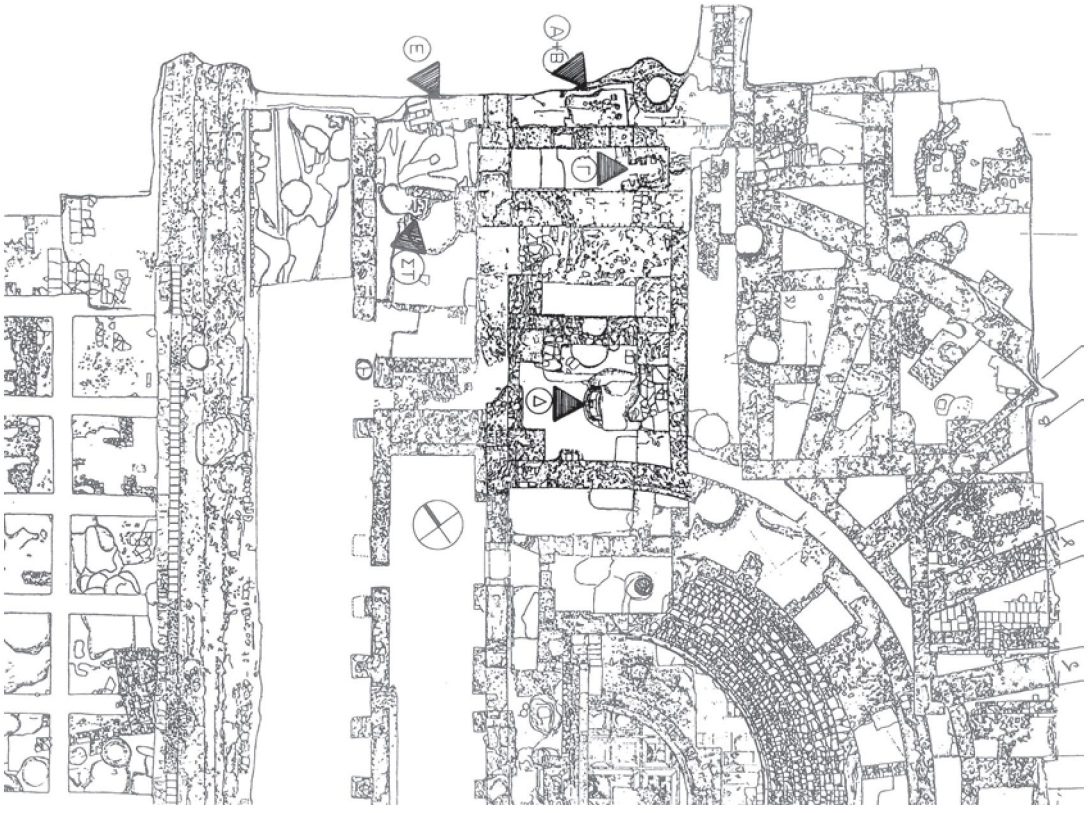


Fig. 213 Ancient Agora, the mint, plan of the area north of the Odeion.

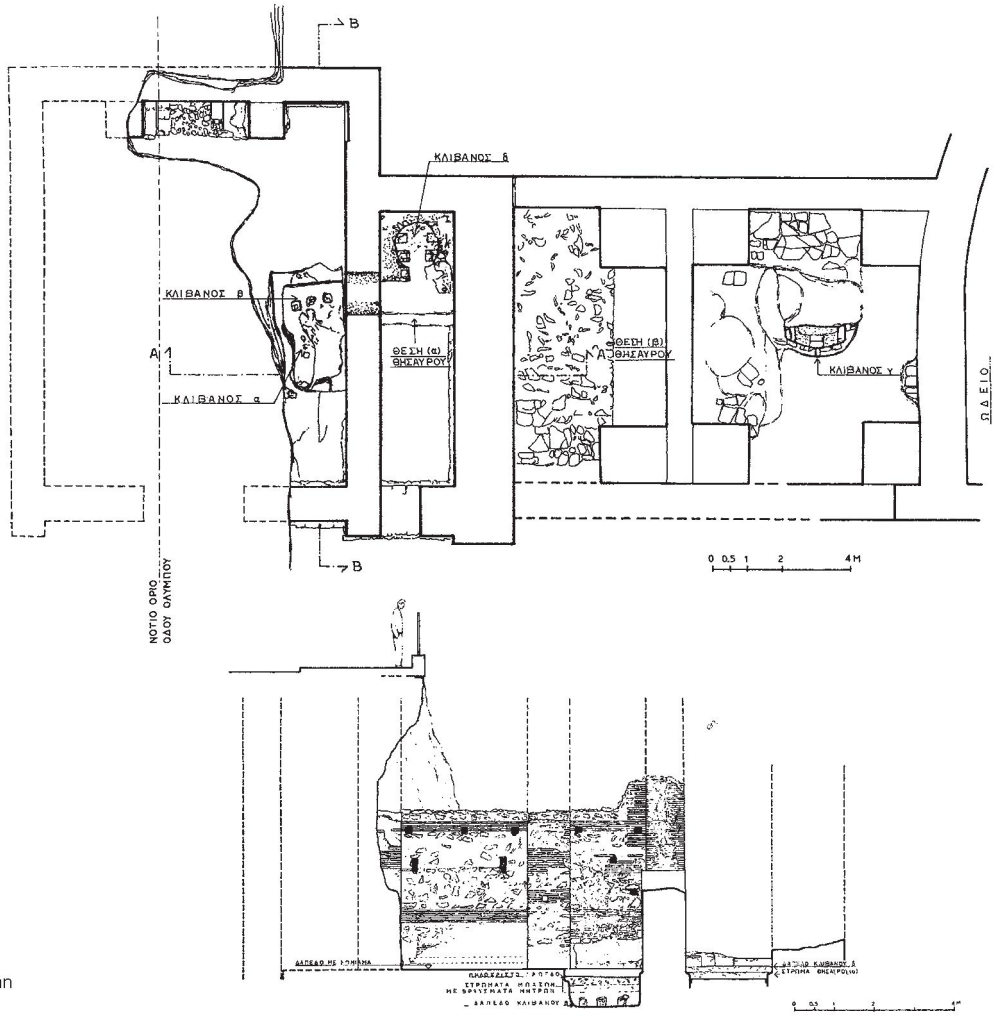


Fig. 214 Ancient Agora, the mint, plan and section of the mint.

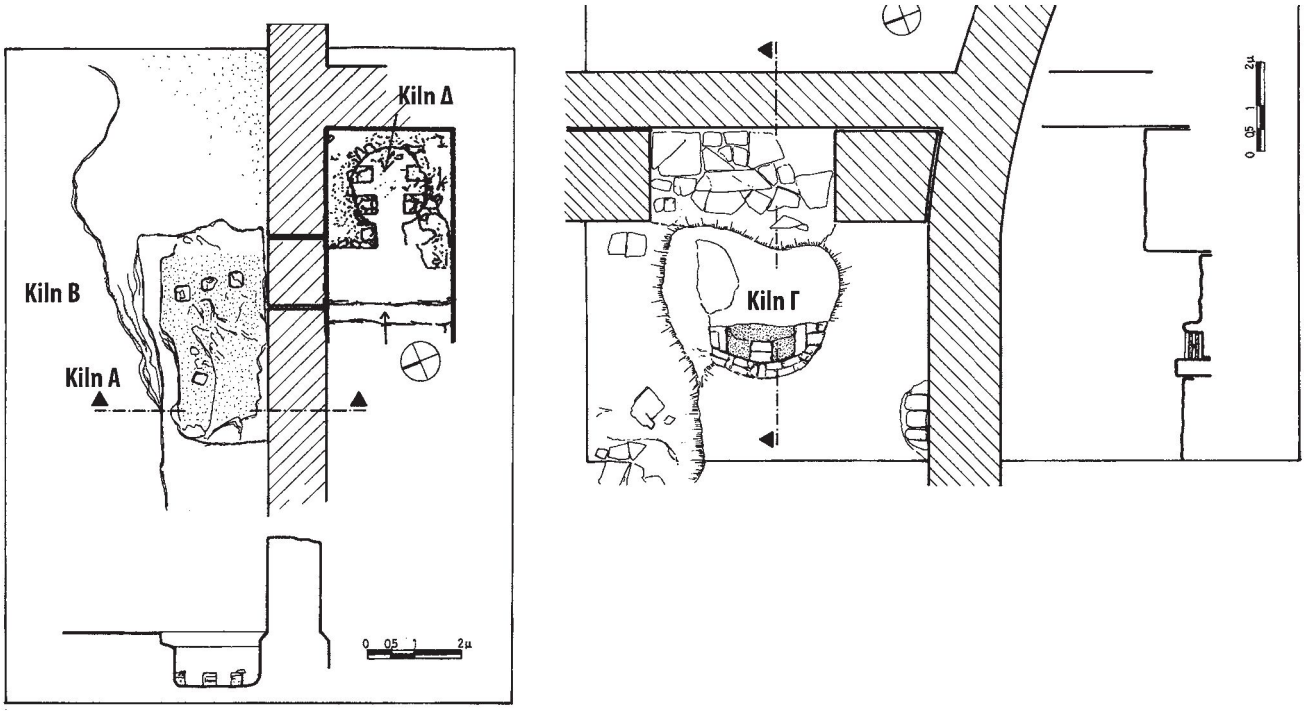


Fig. 215 Ancient Agora, the mint, plan of the kilns A, B, C, D.

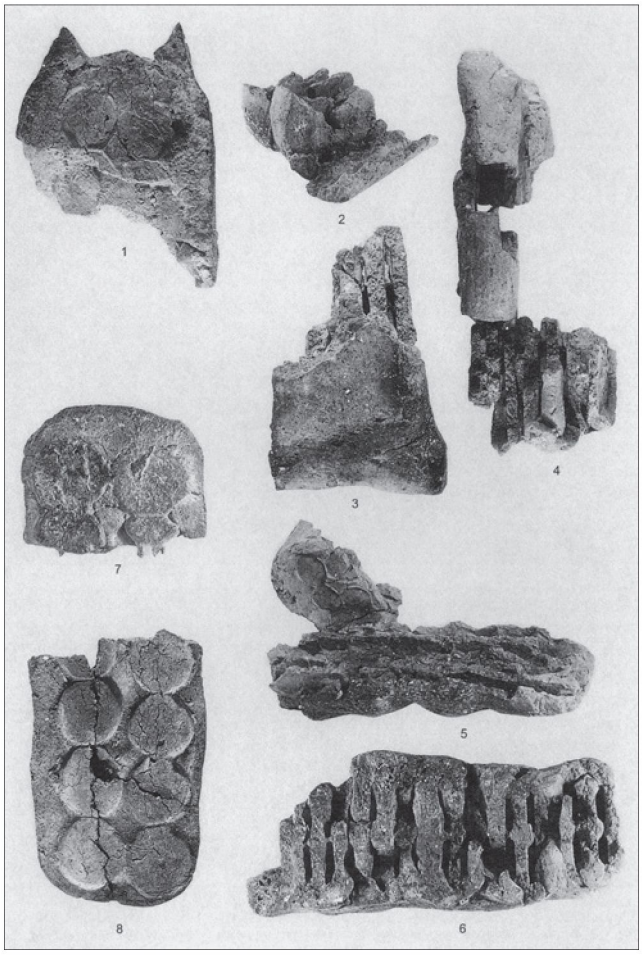


Fig. 216 Ancient Agora, the mint, pieces of moulds for coins.

50 figs 217-220

Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 7i)
Address: Ancient Agora
Date: Probably seventh century
Description: When the Ancient Agora was destroyed, the area of the Odeion was transformed into a rainwater reservoir and the surrounding rooms into workshops, probably sometime in the seventh century. The square room to the north was used initially as a workshop for clay and metal vessels and later on for the production of lime. A circular kiln was discovered at the northern end of the excavated part of the eastern wing of the forum, to the north of the Odeion. Amorphous masses of clay and metal (possibly copper or bronze) were found in the kiln. At least two cylindrical clay-melting pots, a slender and a wider one, were also found. These contained metal residue, again either copper or bronze. It has been assumed that the kiln contained smelted copper used for casting objects.
Furthermore, several stone and clay moulds for the production of jewellery were found in the shops of the Agora. These were moulds for spherical buttons, rings, amulets (in discoid, rectangular, square, star-shaped and pyramidal shapes), plates with beaded and other geometrical patterns on them, and Greek crosses with the words »ΦΩΣ« and »ΖΩΗ« (»Light« and »Life«) on their finials.
Bibliography: Velenēs et al., Programma Archaias Agoras 247-256 esp. 251. – Valavanidou, Ergastēriakes chrēseis 119-130 esp. 124-126. – Moulds as well as melting pots are exhibited in the Museum of the Ancient Agora.

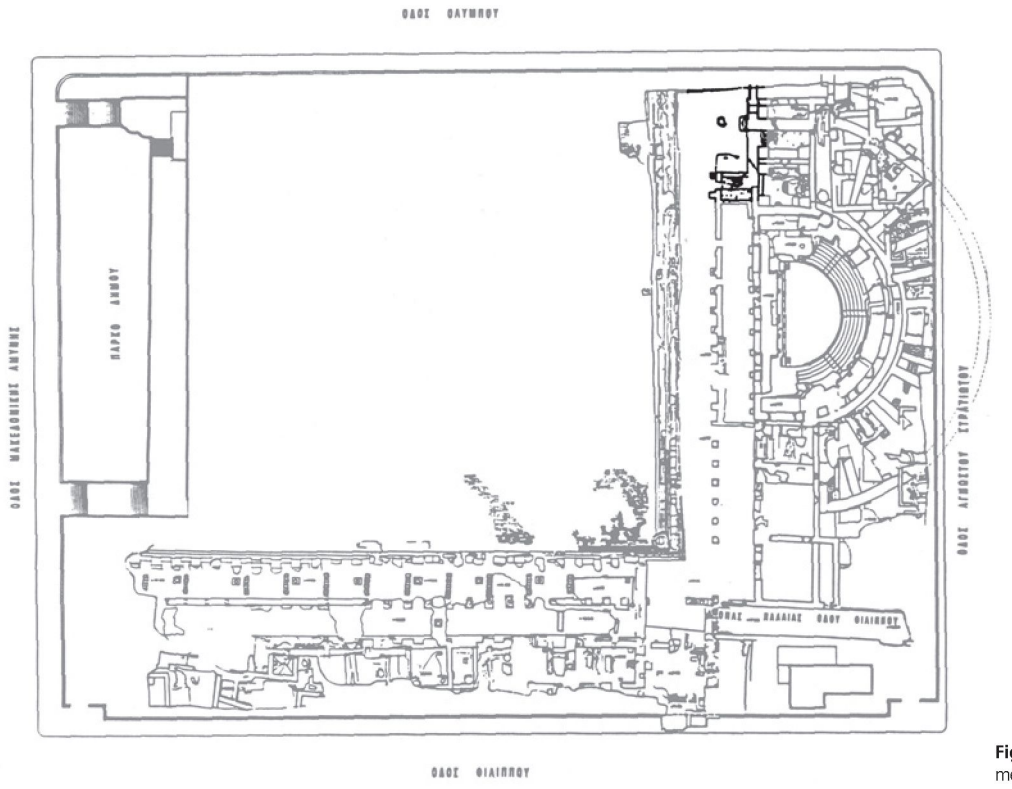


Fig. 217 Ancient Agora, plan with metal workshop marked.

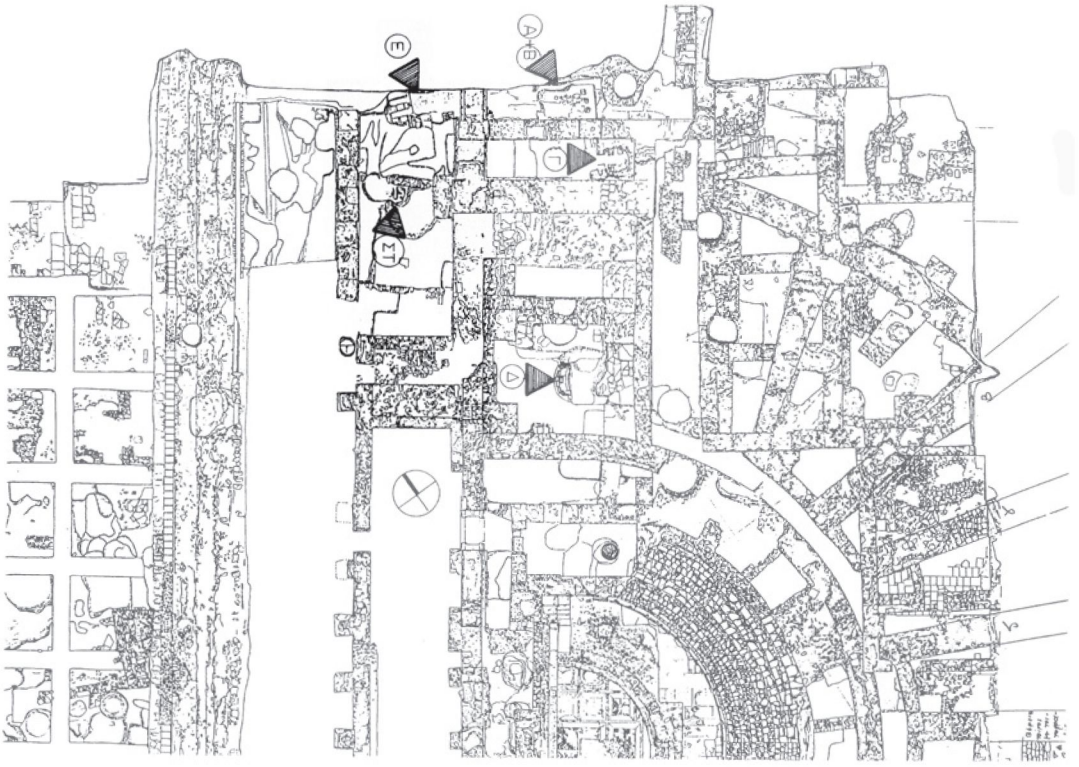


Fig. 218 Ancient Agora, plan of the area north of the Odeion.

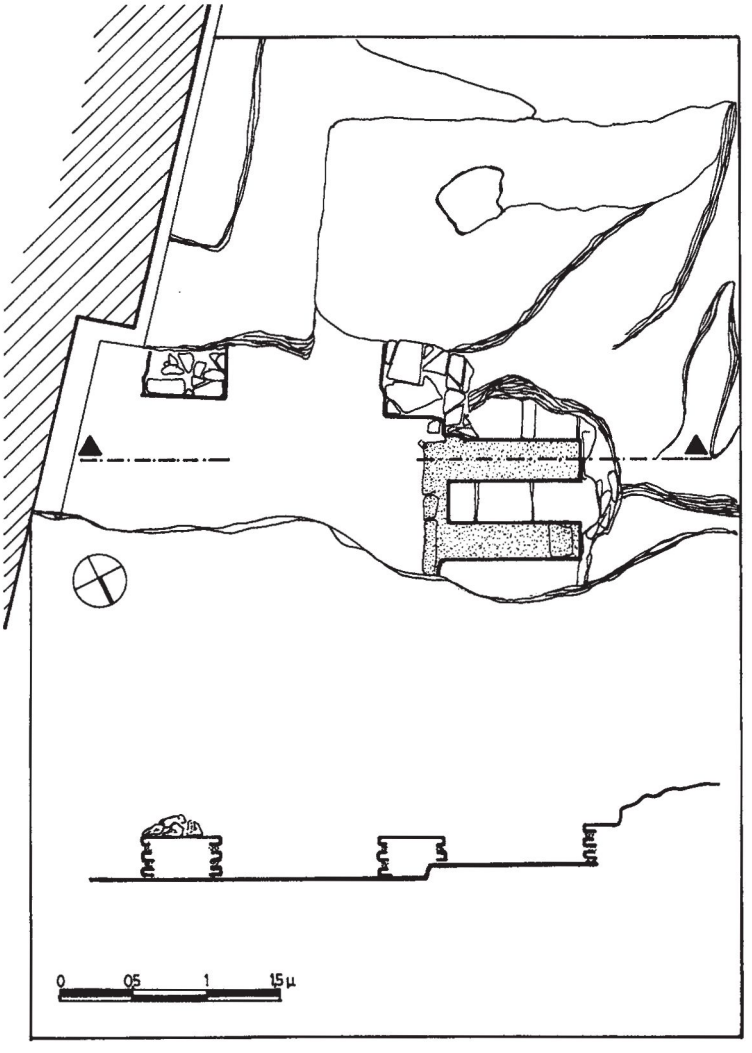


Fig. 219 Ancient Agora, kiln E.

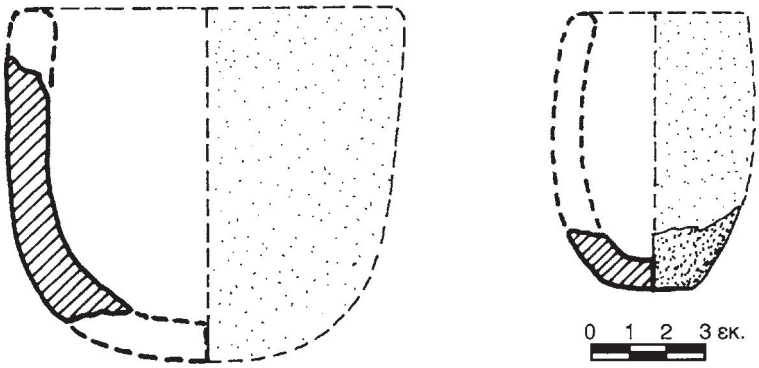


Fig. 220 Ancient Agora, melting pots.

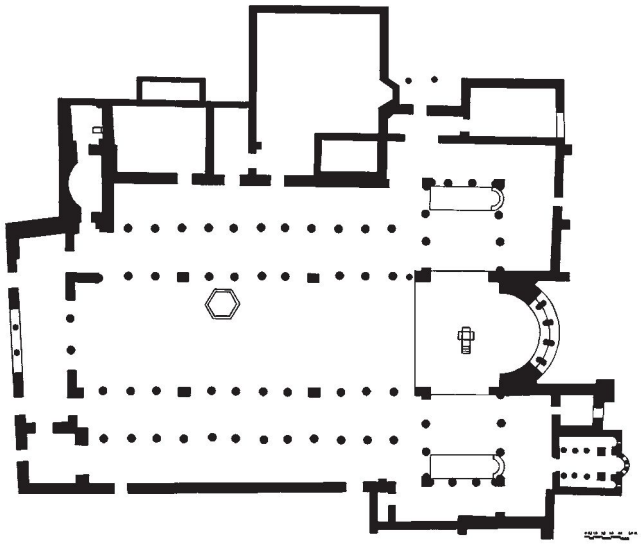


Fig. 221 Surroundings of the Agios Dēmētrios Basilica, plan of the basilica.



Fig. 222 Surroundings of the Agios Dēmētrios Basilica, melting pots.

51 figs 221-223

Type: Metalworking

City: Thessaloniki

Area: City centre (**map:** 7i)

Address: Surroundings of Hagios Dēmētrios Basilica

Period: Probably Early Christian

Description: A set of five small conical melting pots made of micaceous clay (heights ranging from 3 cm to 6.5 cm and rim diameters from 2 cm to 5 cm) were found during the excavations conducted in the area of the complex of Hagios Dēmētrios. Two of them are the size of a thimble, one of them containing 3.8 ml and the other one 4.5 ml. The other three pots have the size of small cups, one of them containing 37 ml and the other two 42.5 ml each. These would indicate some metallurgical activity that was also probably connected with the role of this church as a famous pilgrimage centre, or, less probably, indicates the presence of a goldsmith on the site. Only one of the smaller pots retains a layer of smelted metal, while the remaining four are entirely without residue, seemingly unused, although there are signs of burning on their exterior.

Although the volume of the melting pots is well-defined, the weight of different metals that they could contain varies considerably. Figures for the most probable metals are given for each one of the melting pots in the following **table**:

Reg. no.	Vessel's Volume	Gold	Silver	Copper	Lead
BK 4474/7	3.8 ml	73.4 g	39.8 g	34 g	43.3 g
BK 4474/8	4.5 ml	86.9 g	47.2 g	40.3 g	51 g
BK 4474/6	37 ml	714.8 g	388.1 g	331.5 g	419.9 g
BK 4474/5	42.5 ml	821.1 g	445.8 g	380.8 g	482.3 g
BK 4474/4	42.5 ml	821.1 g	445.8 g	380.8 g	482.3 g

A stone mould, probably for metal *eulogiae*, was also found in the same basilica (**fig. 30**), providing yet more evidence for artisanal activity connected to pilgrimage within the architectural complex of Hagios Dēmētrios.

Bibliography: Cat. Athens 2002, 101 no. 87 (P. Kampanis).

52 figs 224-226

Type: Metalworking

City: Thessaloniki

Area: Upper city, Koule Kafe (**map:** 6j)

Address: 5 Gyzē Street

Date: Dark Ages or Middle Byzantine period (seventh to ninth centuries)

Description: A metal workshop was discovered in the north-western part of an area that had been used for the building of houses since the Roman period up until the reign of Justinian I. It comprises a room (5 m × 4 m) with a small reservoir (1.70 m × 1.70 m) and connecting water pipe. The room is floored with marble *spolia*. The entrance to the workshop is in the middle of the western wall and a massive marble threshold is preserved. The amount of iron slag found indicates that the workshop was a forge. A hearth (40 cm × 40 cm) to the left of the entrance is connected with the workshop. Forging also took place towards the southern part of the site, where an Early Christian wall was demolished and a second melting kiln was constructed in its place. Parts of the workshop seem to include a well (diam. 1.2 m), which is hewn from the rock outside the building and a drainage pipe found outside the thick walls (width 0.8 m) that enclose the whole site.

Bibliography: Cat. Thessaloniki 2002, 11. – Karydas, Anaskaphes Agias Sophias kai Gyzē 340-342.



Fig. 223 Surroundings of the Agios Dēmētrios Basilica, stone seal, rear side.

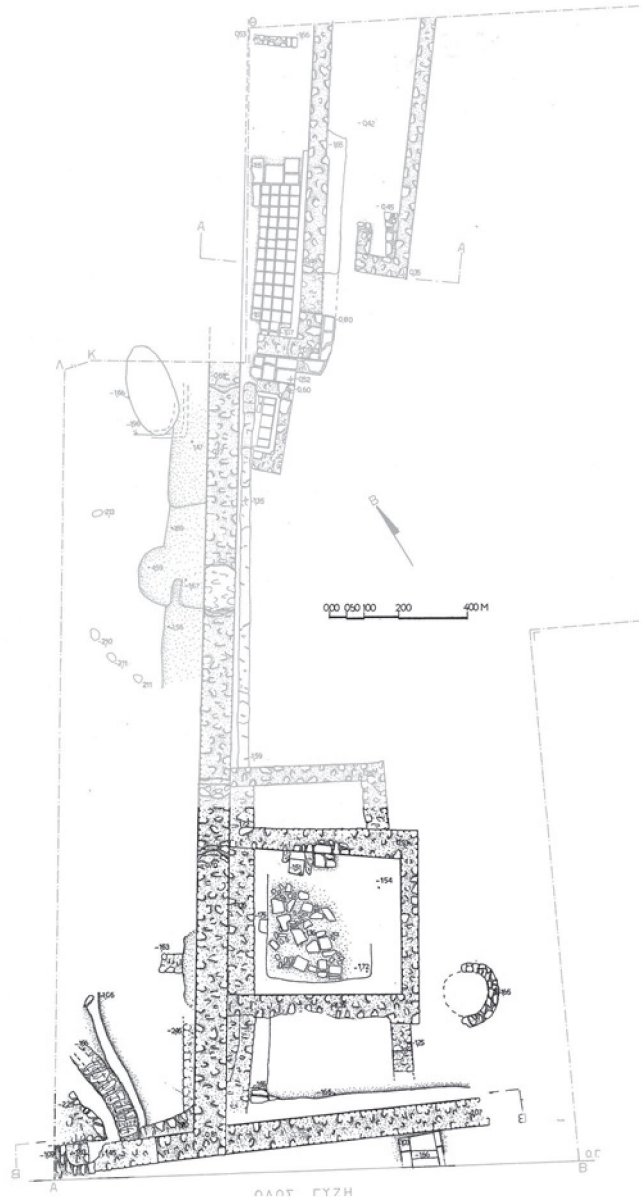


Fig. 224 5 Gyzē Street, plan of the excavation.



Fig. 225 5 Gyzē Street, view of the cistern and water pipe.



Fig. 226 5 Gyzē Street, view of the pavement of the cistern.

Address: 3 Agapēs Street
Date: Middle Byzantine (probably eleventh century)
Description: In the Middle Byzantine period, at least two houses were built on the site of an Early Christian house with mosaic floors and a small bath. Found in the fill from this period were several coins, much Middle Byzantine white-clay glazed pottery tableware (vessels) and cooking pots dated to the last decade of the eleventh century. The site was turned into a cemetery in the Late Byzantine period. A Middle Byzantine glass workshop also operated here. Among the workshop's detritus, two black, polished touchstones were found, possibly indicating the presence of a jeweller or goldsmith as well. Microscopic traces of gold have been found on the touchstones.
Bibliography: Cat. Athens 2002, 107 no. 97 (I. Kanonidēs). – On the excavation see Kanonidēs, Agapēs 3, 490-493. – On Middle Byzantine clay finds, see Kanonidēs, Mesovyzantinē ephyalōmenē keramikē 71-80. – On the finds of the glass workshop, see Antonaras, Production and Uses of Glass 193 pl. 15.

53 figs 227-228

Type: Metalworking?
City: Thessaloniki
Area: City centre (**map:** 8I)

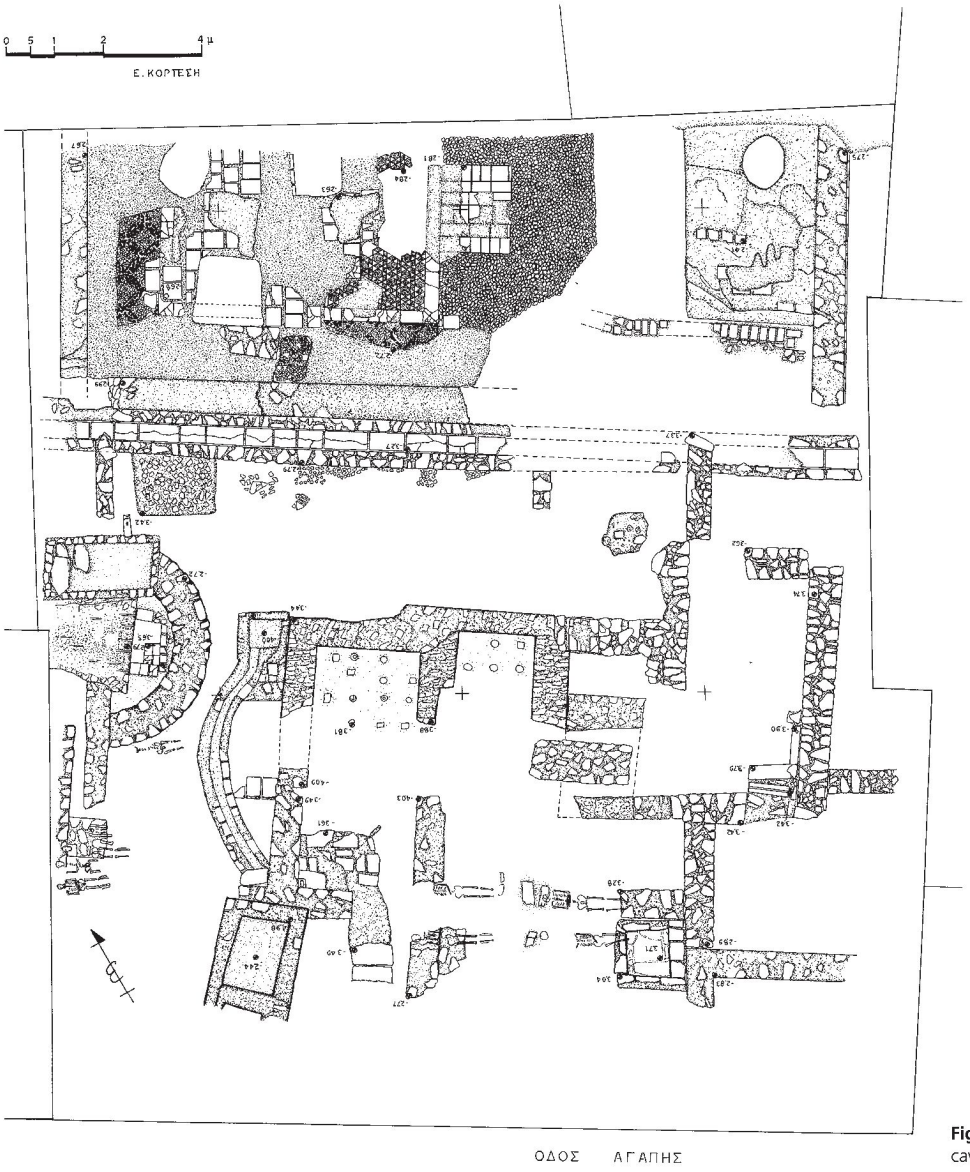


Fig. 227 3 Agapēs Street, plan of the excavation.

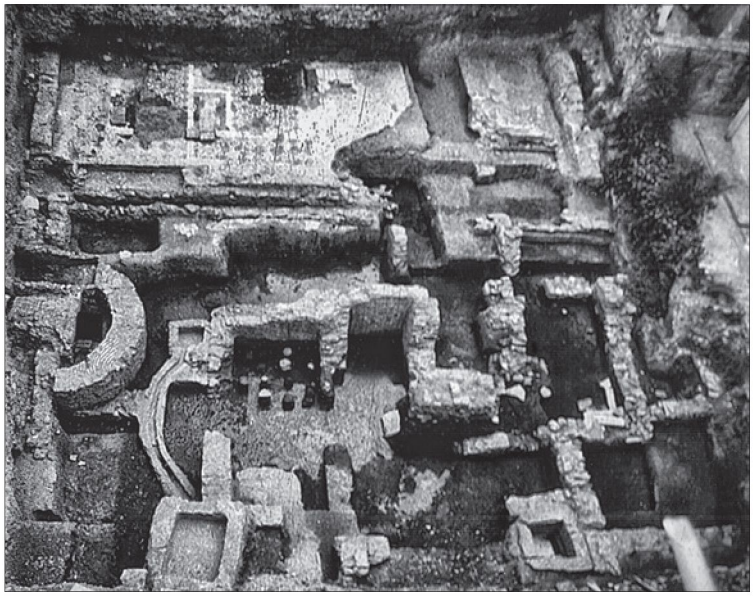


Fig. 228 3 Agapēs Street, general view of the excavation.

54 fig. 229
Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 6i)
Address: 74 Olympiados Street
Date: Probably Middle Byzantine
Description: A metal-smelting workshop was discovered in the backyard of a fourth or fifth-century villa with a *triclinium* and colonnaded atrium during salvage excavations. It consists of makeshift rubble constructions, containing built furnaces, thick clay melting pots, water pipes and rock-cut cisterns. A rectangular built water reservoir (1 m × 1 m), with a central cleaning hole, probably belonged to a thread dyeworks.
Bibliography: Markē, Olympiados 74, 430-432.

55 figs 230-231
Type: Metalworking
City: Thessaloniki
Area: Acropolis (**map:** 2j)
Address: 3 D. Tzacheila Street
Date: Ninth to tenth centuries
Description: Three rectangular reservoirs (2 m × 0.80 m; 2 m × 1.10 m; and 2 m × 0.90 m, respectively) coated with hydraulic mortar were found in the ruins of the diaconicon of an Early Christian basilica that was reconstructed at the end of the sixth or in the seventh century. Sometime in the eighth to ninth centuries, one of them was abandoned and filled with rubble. The other two were turned into what appear to be metal-smelting kilns as the conical iron masses and other traces of burning in their interior would indicate. They were coated with whitish plaster during their transformation and their mortar floors were transformed into a firing chamber's perforated floor, which was supported by 0.10 m high posts. Five posts on the northern wall and four on the southern wall are preserved. At a later date, another floor of stones and bricks was added on top of the initial one.
Bibliography: Markē, Tzacheila 3, 584-586 figs 11-12. – Kōnstantinidou, Neotera stoicheia 239-248 esp. 245-246, where the workshop is dated to the Ottoman period.

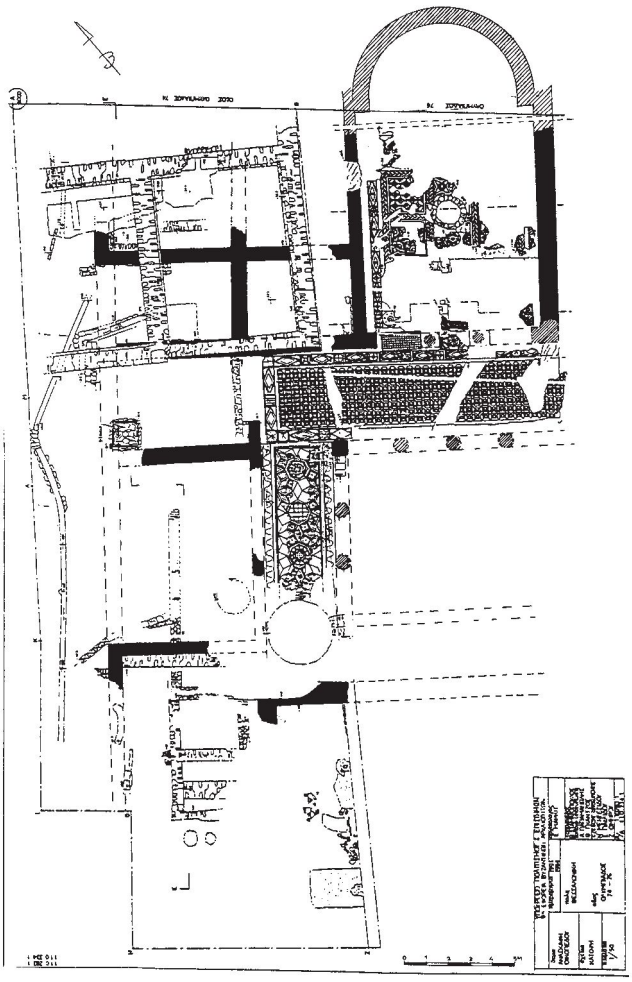


Fig. 229 74 Olympiados Street, plan of the excavation.

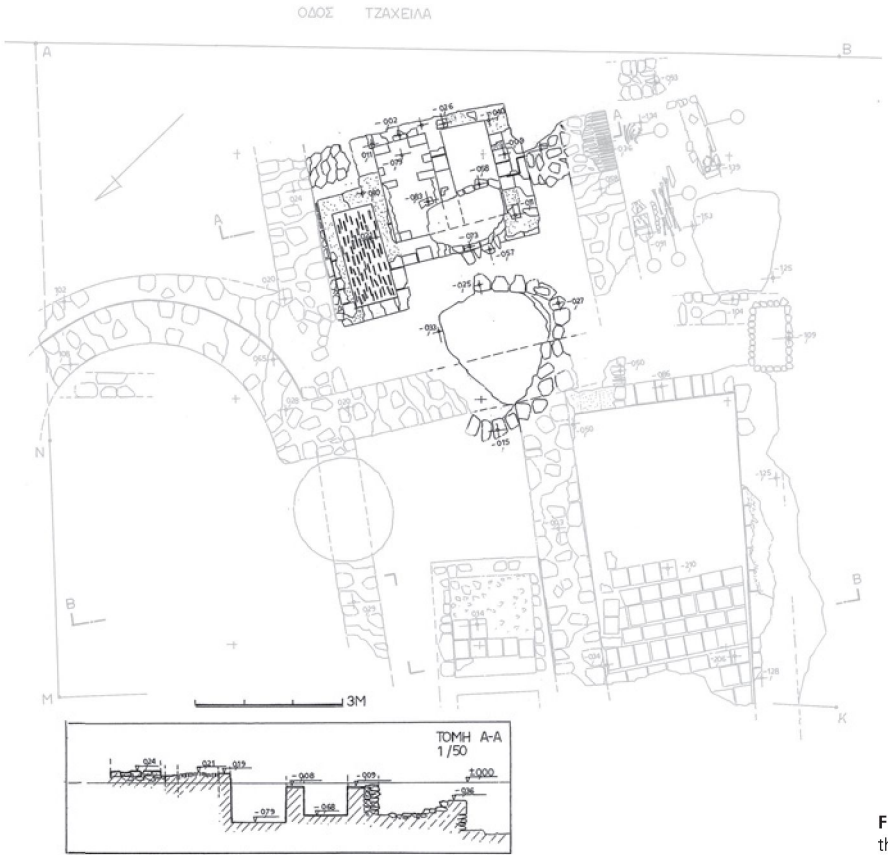


Fig. 230 3 D. Tzacheila Street, plan and section of the excavation.



Fig. 231 3 D. Tzacheila Street, general view of the excavation.

56 **figs 232-233**
Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 8h)
Address: 74 Venizelou Street
Date: Middle Byzantine period
Description: Byzantine workshops operated on the site of an important and luxurious Early Christian building, which was probably destroyed by fire in the seventh century. The evidence for this comes from the stone base of a press and burnt masses of metal that were found on the site, indicating a forge or some workshop relevant to the production or processing of metal products.
Bibliography: Kissas, Venizelou 74, 238-242 esp. 242.

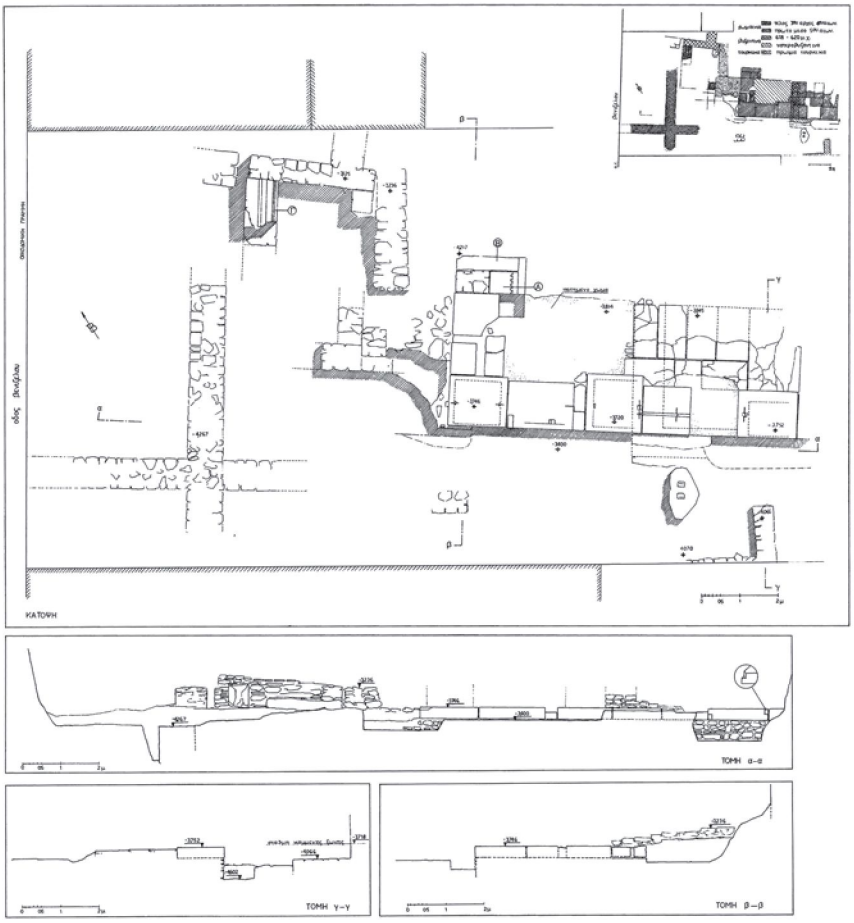


Fig. 232 74 Venizelou Street, plan and section of the excavation.

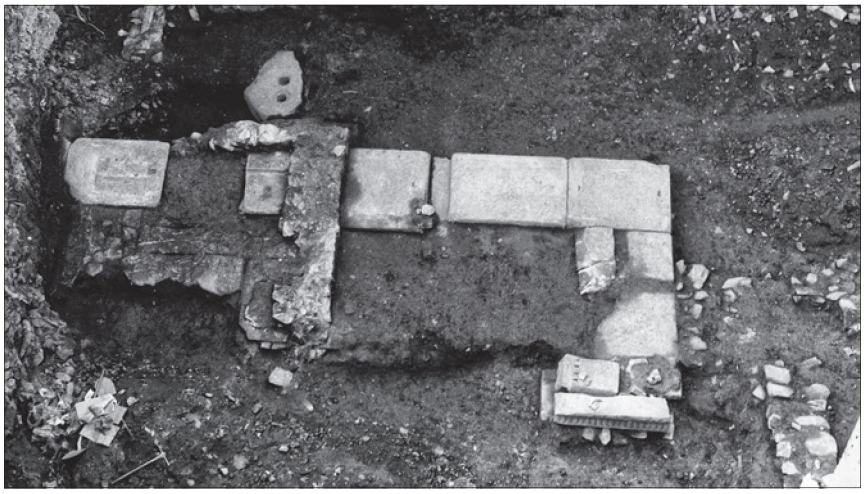


Fig. 233 74 Venizelou Street, general view of the excavation.

57

figs 234-235

Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 8j)
Address: 67 Egnatia and G. Bakatselou Street
Date: Seventh to twelfth centuries
Description: Three water pipes and a clay kiln for metal smelting indicate the operation of an open-air workshop on the ruins of a sixth-century public building. The walls of the kiln (diam. 0.80 m, height 0.55 m) comprise six large *tegulae* roof tiles placed vertically. An extensive layer of ash was found around the kiln.
Bibliography: Markē, Provlēma anagnōsēs 457-458 fig. 9 illus. 5.

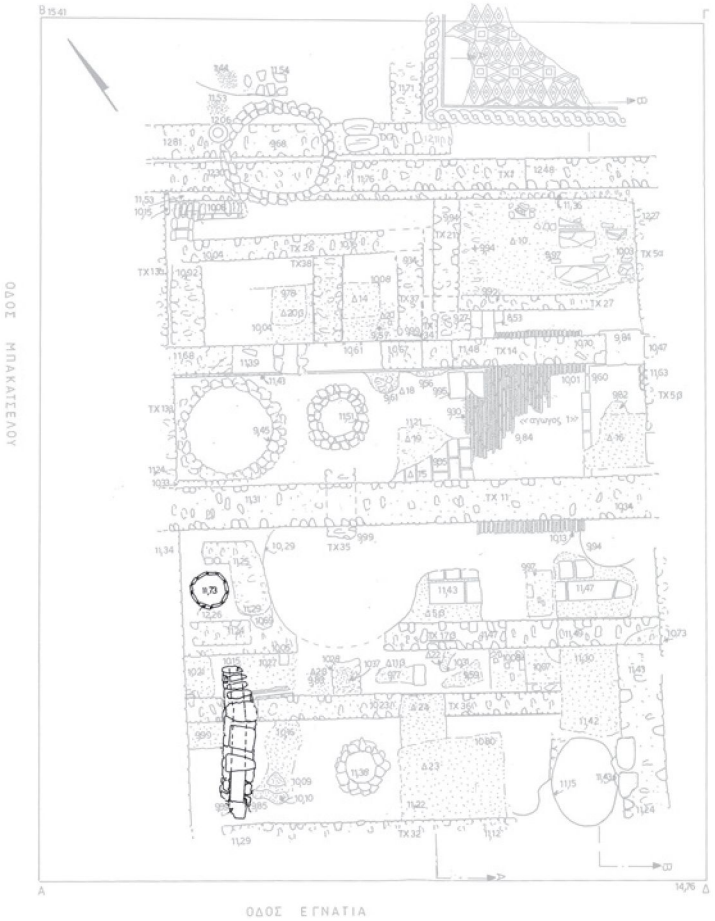


Fig. 234 67 Egnatia and G. Bakatselou Street, plan.



Fig. 235 67 Egnatia and G. Bakatselou Street, view of the kiln.

58 **figs 146-147**
Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 10h)
Address: 28 Phrangōn Street
Date: Tenth to thirtheenth centuries
Description: Remains of Middle Byzantine chambers, dated sometime after the sack of the city in 904, were discovered above the ruins of a sixth-century public building. These chambers comprise makeshift walls and floors covering the entire area of the excavation. The nature of the artisanal activities that took place here is identifiable from the metallurgical refuse discovered in two pits. A water pipe and a well are also ascribed to the same period.
Bibliography: Markē/Chatzēiōannidēs, Phrangōn 28, 273-280 esp. 277.

59 **figs 136-137, 236-237**
Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 8j)
Address: Egnatia Street, Venizelou Metro Station excavations
Date: Middle Byzantine period (eleventh to twelfth centuries)
Description: Excavations in Egnatia Street at the Venizelou Metro Station site uncovered finds indicating that several shops and workshops operated along the main street of the city, known to the Romans as the *Decumanus Maximus* and the Byzantines as the *Leōphoros*. This was, at least during the Early Christian period, flanked by colonnades and wide pavements. The wide variety of goods being produced and/or sold locally is shown by finds of a small, pointed, clay melting pot; moulds for the production of metal jewellery, apparently of bronze; and a large number of identical examples of bronze crosses, rings and bracelets. Glass bracelets, some of them with painted decoration, were also found in these shops.
Among the metal objects produced on the site, according to the moulds unearthed there, the following types can be identified:
1. crosses: larger, seemingly Latin ones and a smaller type of a Greek cross with rounded dotted arms, with several bronze examples known from Late Byzantine cemeteries of the city;
2. crescent-shaped earrings: a) one type with two-lobed upper part being accentuated at the ends with globular beads; the surface of the body is decorated with rows of interchanging dotted squares and circles. In the middle of the body's lower part the suspension system for two movable elements is visible; b) the second type is distinguished by a four-lobed upper part, and each end is also accentuated by a globular bead. On the body, within a beaded, band is inscribed an obscure motive, possibly two birds facing one another. In the middle of the body's lower part the suspension system for two movable elements is visible;
3. ribbed buttons;
4. discoid clasps bearing the figure of a bird;
5. beaded rings;
6. dotted discoid elements, possibly meant to be used as applied rosettes.
Bibliography: Makropoulou et al., METRO kata to 2011. – Makropoulou, To ergo. – Makropoulou/Kōnstantinidou, METRO Thessalonikēs – Stathmos Venizelou.



Fig. 236 Egnatia Street, Venizelou Metro Station excavation, Middle Byzantine bronze cross.



Fig. 237 Egnatia Street, Venizelou Metro Station excavation, Middle Byzantine glass bracelet.

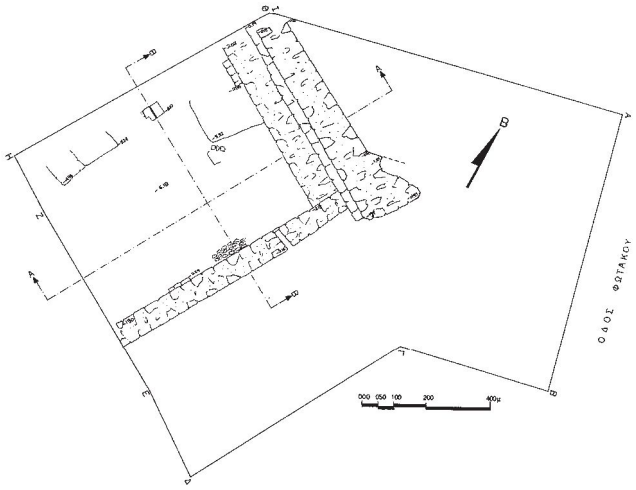


Fig. 238 3 Phōtakou Street, plan of the excavation.

60 **fig. 238**
Type: Metalworking
City: Thessaloniki
Area: City centre (**map:** 6k)
Address: 3 Phōtakou Street
Date: Ottoman
Description: A ruined twelfth century water reservoir that had been partly filled during the Ottoman period was discovered during salvage excavations conducted here prior to the construction of a new building. In the same layer, signs of a forge – a firing pit and a well – were also found, indicating the workshop's period of operation.
Bibliography: Markē, Phōtakou 3, 520-521.

Glass Workshops

61 **figs 239-242**
Type: Glass workshop
City: Thessaloniki
Area: City centre (**map:** 8i)
Address: Ancient Agora
Date: Early Christian, probably fifth to sixth centuries
Description: Some evidence of secondary glassworking was discovered during the earliest excavations of 1962 and 1966 at the site of the Ancient Agora. This comprised small fragments of raw glass and a small part of the furnace, i.e. lime-mortar covered with a fine layer of greenish glass, as well as deformed masses of glass.
Bibliography: Antōnaras, Rōmaïkē kai palaiochristianikē yalourgia 70-72. – Antōnaras, Yalopoiia kai yalourgia 249-250. – Antonaras, Glass Working Activities 94.



Fig. 239 Ancient Agora, small part of glass furnace covered with molten glass and deformed masses of glass.

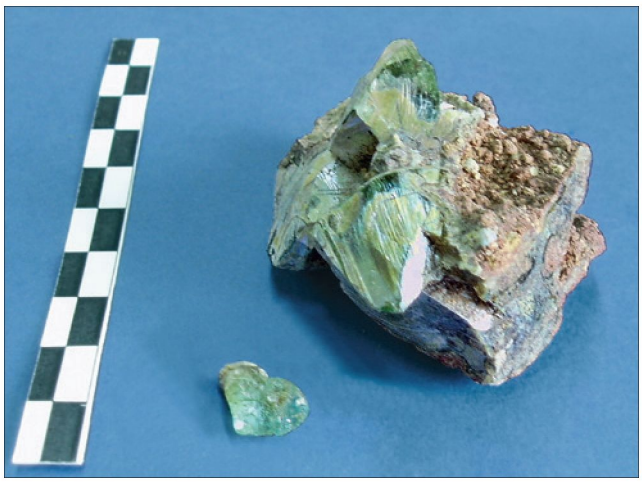


Fig. 240 Ancient Agora, mass of glass attached to a clay mass, probably part of a furnace.

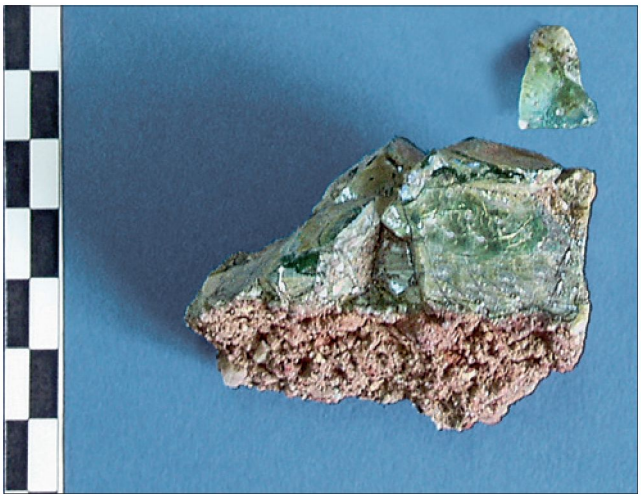


Fig. 241 Ancient Agora, mass of glass attached to a clay mass, probably part of a furnace.

62 figs 243-252

Type: Glass workshop
City: Thessaloniki
Area: City centre (**map:** 8k)
Address: Acheiropoiētos, east of the basilica
Date: Early Christian, probably fifth century
Description: Remains of a Roman public bath house were found during the excavation of the site, east of the apse of the Acheiropoiētos Basilica. Among the movable finds, several dislocated objects found in rubble indicate glassworking activity: 1) dislocated small parts of the circular furnace (internal diam. c. 0.30 m to 0.40 m); 2) fragments of a roughly semicircular melting pot reinforced at least twice with layers of clay and covered with molten glass (diam. 13 cm, preserved height 3.5 cm, thickness 0.6 cm); 3) an iron scraper; 4) the conical base of a fourth or fifth-century vessel[558]; 5) a small part of a glass moil (diam. c. 2.5 cm), indicating the diameter of the glassblower's pipe.
Bibliography: For the excavation see Petsas, Oikopedo Geōrgiadē 393-396. – For the glass finds see Antōnaras, Rōmaïkē kai palaiochristianikē yalourgia 66-69. – Antōnaras, Yalopoiia kai yalourgia 246-248. – Antonaras, Glass Working Activities 93-94.



Fig. 242 Ancient Agora, chunk of raw glass.

558 Antōnaras, Rōmaïkē kai palaiochristianikē yalourgia 220 form 70.

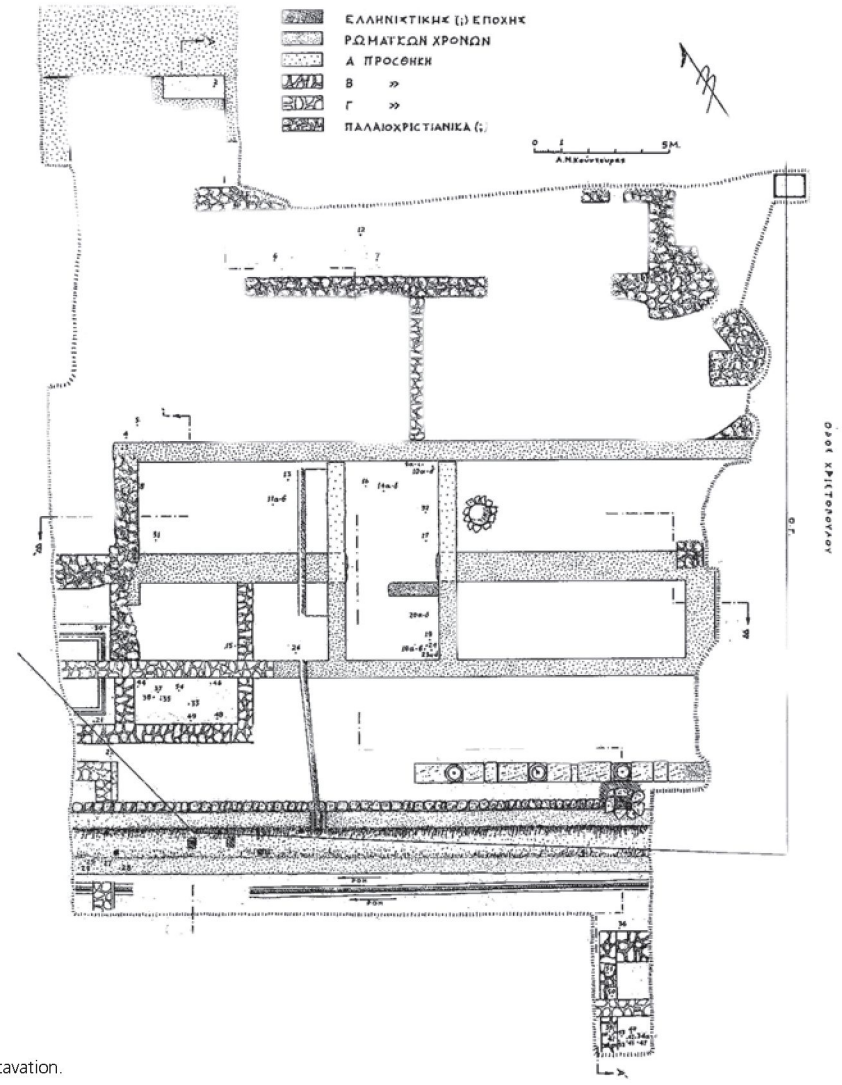


Fig. 243 East of the Acheiropoiētos Basilica, plan of the excavation.

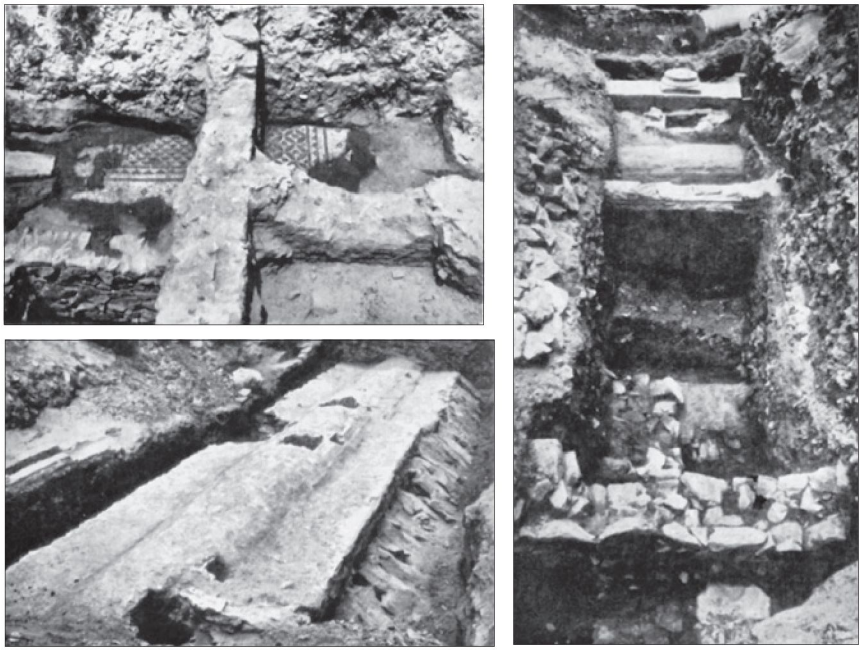


Fig. 244 East of the Acheiropoiētos Basilica, views of the excavation.



Fig. 245 East of the Acheiropoiētos Basilica, part of glass furnace covered with molten glass, an iron tool and fragments of glass vessels.



Fig. 246 East of the Acheiropoiētos Basilica, parts of the furnace.



Fig. 247 East of the Acheiropoiētos Basilica, parts of the furnace.

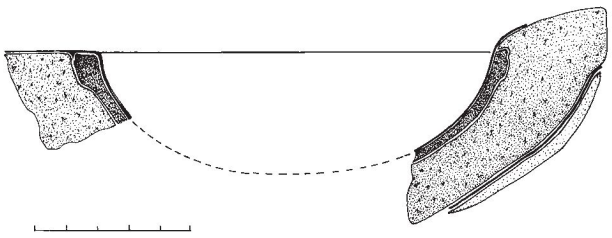


Fig. 248 East of the Acheiropoiētos Basilica, drawing of melting pot.

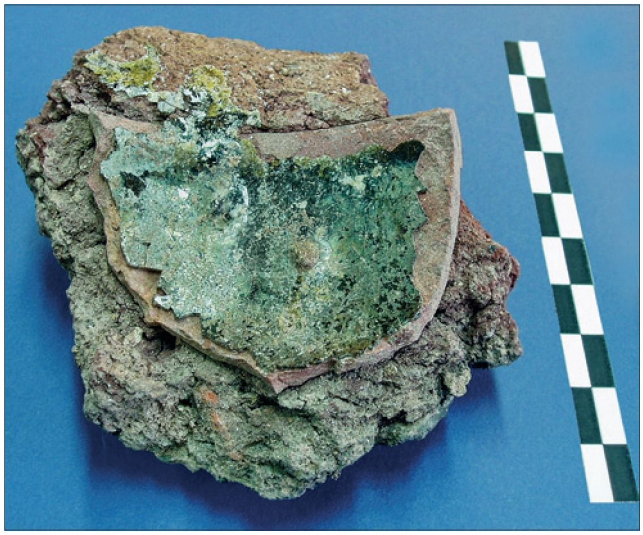


Fig. 249 East of the Acheiropoiētos Basilica, part of a clay melting pot.

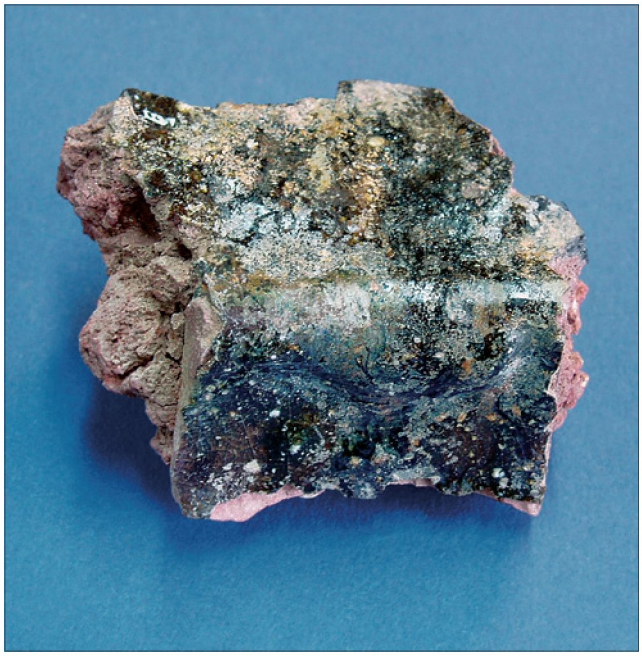


Fig. 250 East of the Acheiropoiētos Basilica, part of a clay melting pot.



Fig. 252 East of the Acheiropoiētos Basilica, deformed glass fragments.



Fig. 251 East of the Acheiropoiētos Basilica, glass moil.

63 **figs 184-185, 253-262**

Type: Glass workshop

City: Thessaloniki

Area: Eastern Necropolis (**map:** 7m)

Address: Department of Theology, Aristotle University of Thessaloniki

Period: Probably sixth century

Description: A rectangular building, identified by the excavator as a »warehouse«, was discovered during excavations prior to the building of the Department of Theology of the Aristotle University of Thessaloniki in 1965. Several construction phases were observed. It was dated, at least partly, to the Early Byzantine era, because its walls were built on graves, mostly dating from the Tetrarchy and few of them to the reign of Justinian I. Clay moulds for clay lamps that can be dated between the second half of the third century and the end of the fourth century were found embedded in the walls. Taking these in conjunction with the clay vessels and the clay water pipes also found here, the excavator concluded that it was a commercial building situated nearby or on the site of a clay lamp workshop (**cat. no. 39**). Movable finds from glassworking were also discovered: 1) masses of clay covered with a layer of greenish glass, probably parts of a furnace; 2) test droplets and cut pieces of greenish glass; 3) moils of greenish glass; 4) fragments of different forms of glass vessels (stemmed beakers, stemmed lamps, hemispherical bowls and ovular flasks) collected on site probably for re-melting. Many of them are identified as fifth to sixth-century products.

Bibliography: For the excavation see Petsas, Theologikē Scholē 334-339 pl. 345-359 esp. 336-339 pl. 347β, 356α, γ, ε. – For the glass finds see Antōnaras, Rōmaïkē kai palaiochristianikē yalourgia 72-75. – Antōnaras, Yalopoiia kai yalourgia 250-253. – Antonaras, Glass Working Activities 94-95.



Fig. 253 Theological Department of AUTH, workshop refuse.



Fig. 254 Theological Department of AUTH, deformed glass fragments.

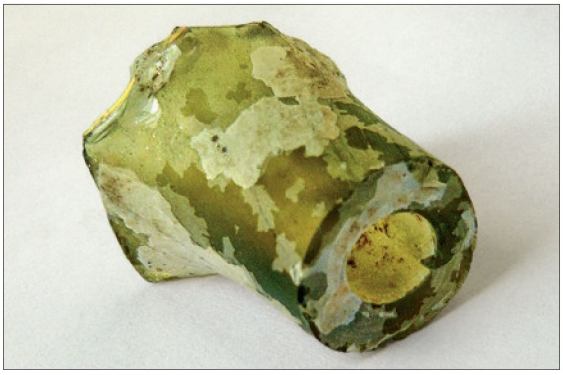


Fig. 255 Theological Department of AUTH, glass moil.



Fig. 256 Theological Department of AUTH, fragments of glass stemmed beakers found in the workshop.



Fig. 257 Theological Department of AUTH, fragments of glass stemmed beakers found in the workshop.

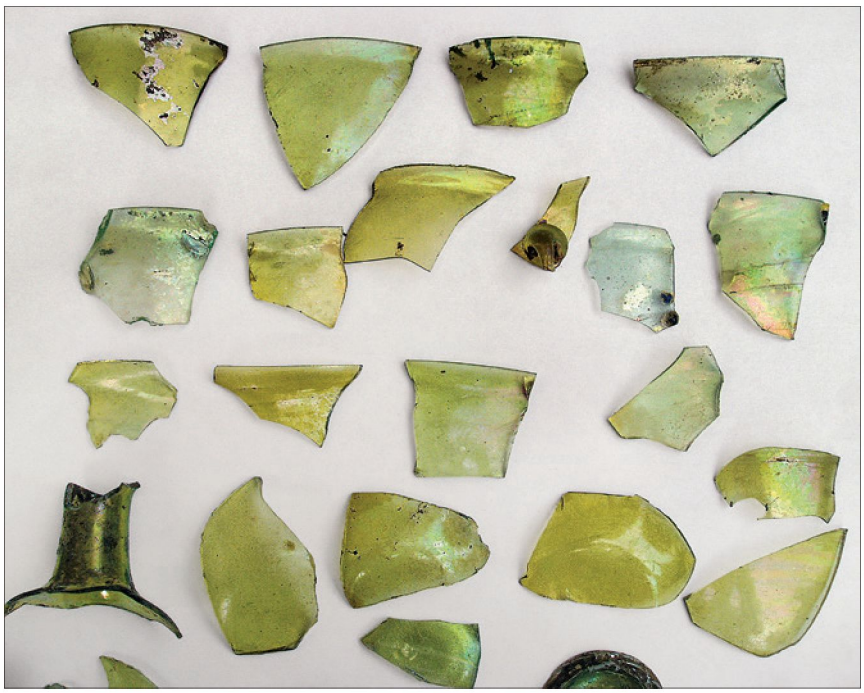


Fig. 258 Theological Department of AUTH, fragments of glass bowls and flasks found in the workshop.

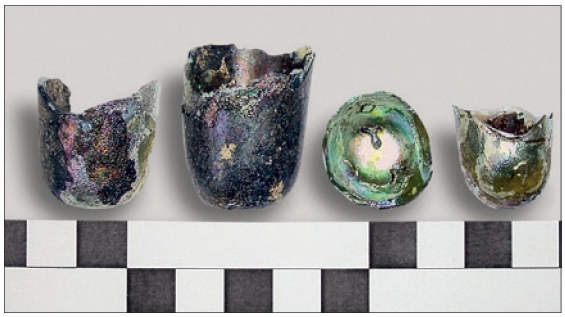


Fig. 259 Theological Department of AUTH, fragments of glass stemmed lamps found in the workshop.



Fig. 261 Theological Department of AUTH, fragments of glass flasks found in the workshop.



Fig. 260 Theological Department of AUTH, fragments of glass vessels found in the workshop.

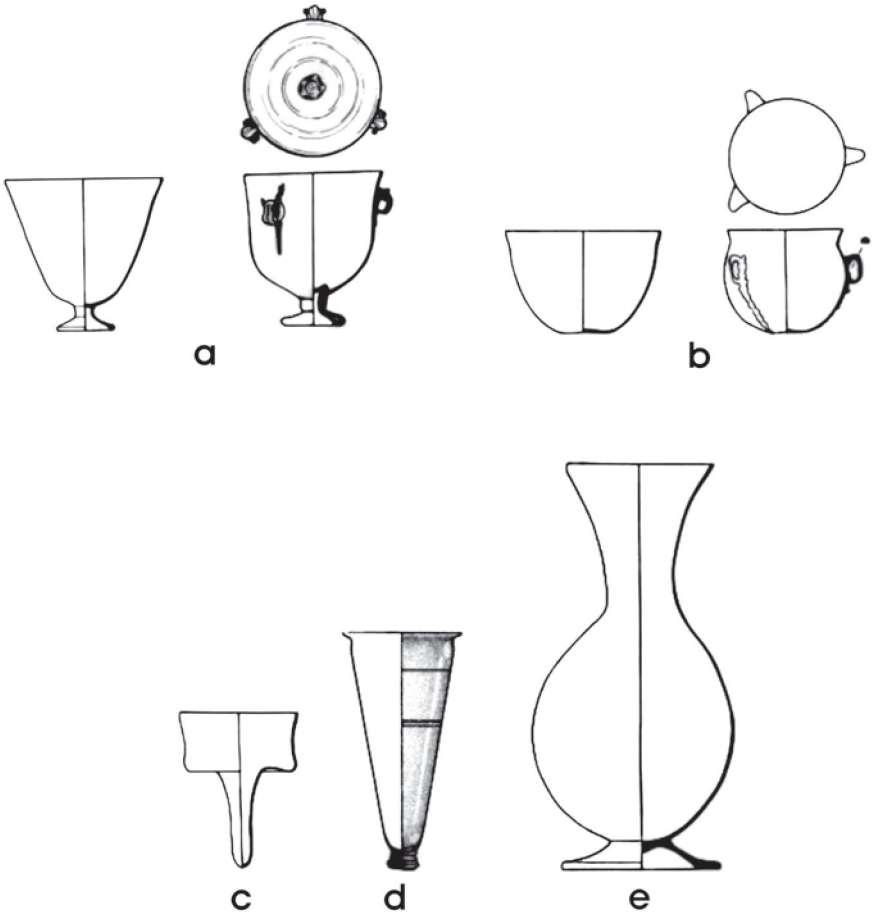


Fig. 262 Theological Department of AUTH, drawings of vessels probably made in the workshop.

64 **figs 263-276**

Type: Glass workshop

City: Thessaloniki

Area: City centre (**map:** 9j)

Address: 45 Vasileōs Ērakleiou Street

Date: Late sixth century

Description: Parts of two intersecting ancient streets and parts of two blocks with luxurious third to fourth-centuries buildings were discovered during salvage excavations. The buildings showed evidence of having undergone several changes in the Early Christian period. At the south end of the eastern block, a corner shop was formed in a later, fifth or sixth-century construction phase, and was used as a glass workshop sometime between the sixth and seventh centuries. Several water pipes and reservoirs datable to the Byzantine and Ottoman periods, along with some indications of a pottery (**cat. no. 28)** and lime kiln (**cat. no. 4**) were also found on the site. In the shop that housed the workshop, three circular glass furnaces (c. 1 m wide) were found: one, with five consequent phases of use and repair; and two older ones, only partly preserved.

More than 5 kg of glass finds have been found discarded mainly in the north-eastern corner of the workshop: 1) chunks and larger pieces of pale green, dark green and dark blue raw glass; 2) deformed masses, test droplets, and many moils; 3) fragments of different forms of glass vessels, some of them distorted and discarded products of the workshop and others probably collected on-site for re-melting. The latter included dozens of stemmed beakers, some with a pressed ligature »Ms«, »Πς« or capital letter »K« on their base; funnel-mouthed flasks; stemmed lamps; a few hemispherical bowls; lamps with massive bases; tiny lamp handles; large gems, and fragments of window panes. Most of the vessels are free blown, while only few are dip-mould-blown.

Bibliography: Antōnaras, Vasileōs Ērakleiou 263-272. – Antonaras, An Early Christian Glass Workshop 95-113. – Antonaras, Production of Glass Lamps in Early Christian Thessaloniki 126-128. – Antonaras, A Special Group 9-10. – Antōnaras, Mia idiaiterē omada. – For the excavation see Akrivopoulou, Vasileōs Ērakleiou 45, 255-262.

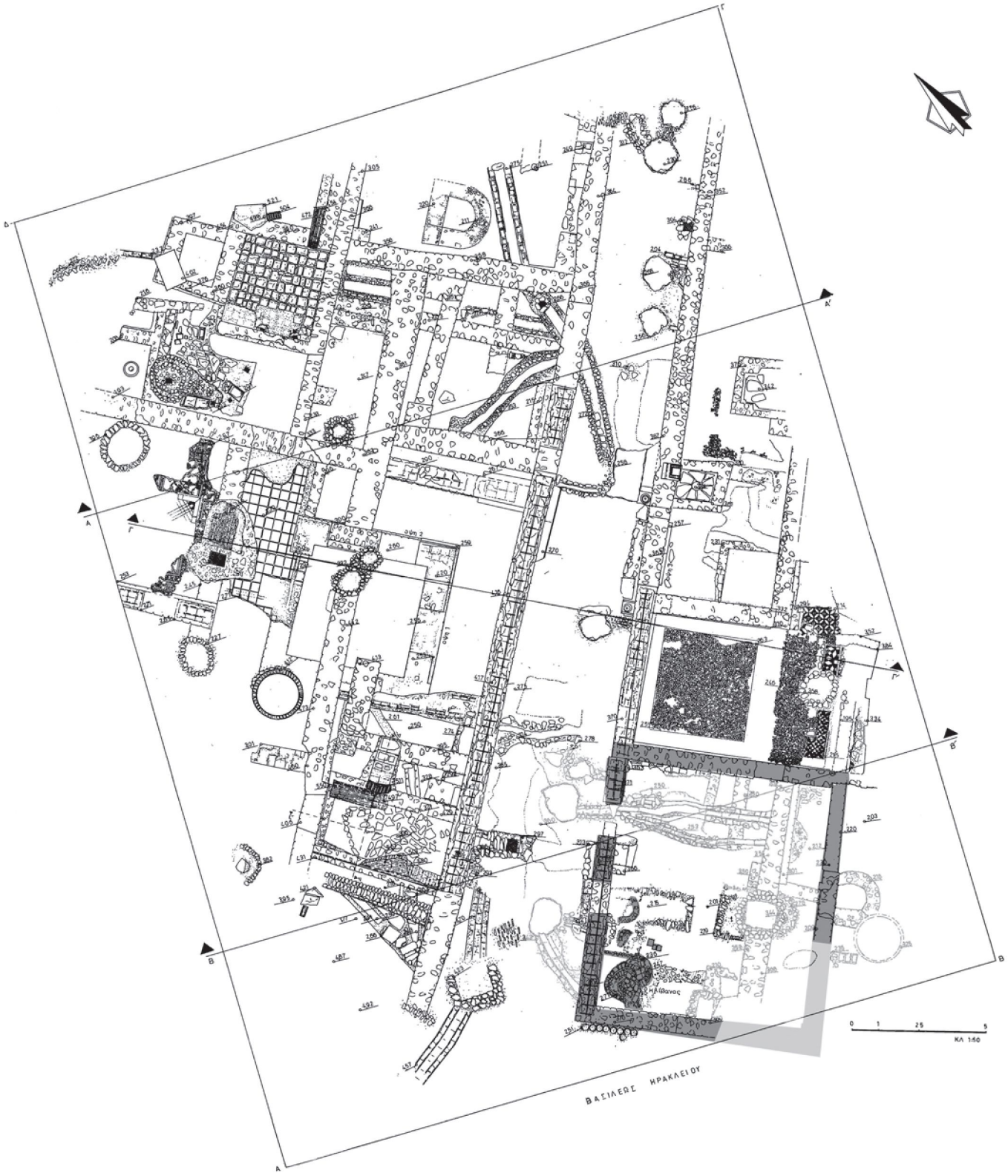


Fig. 263 45 Vasileōs Ērakleiou Street, plan of the excavation.

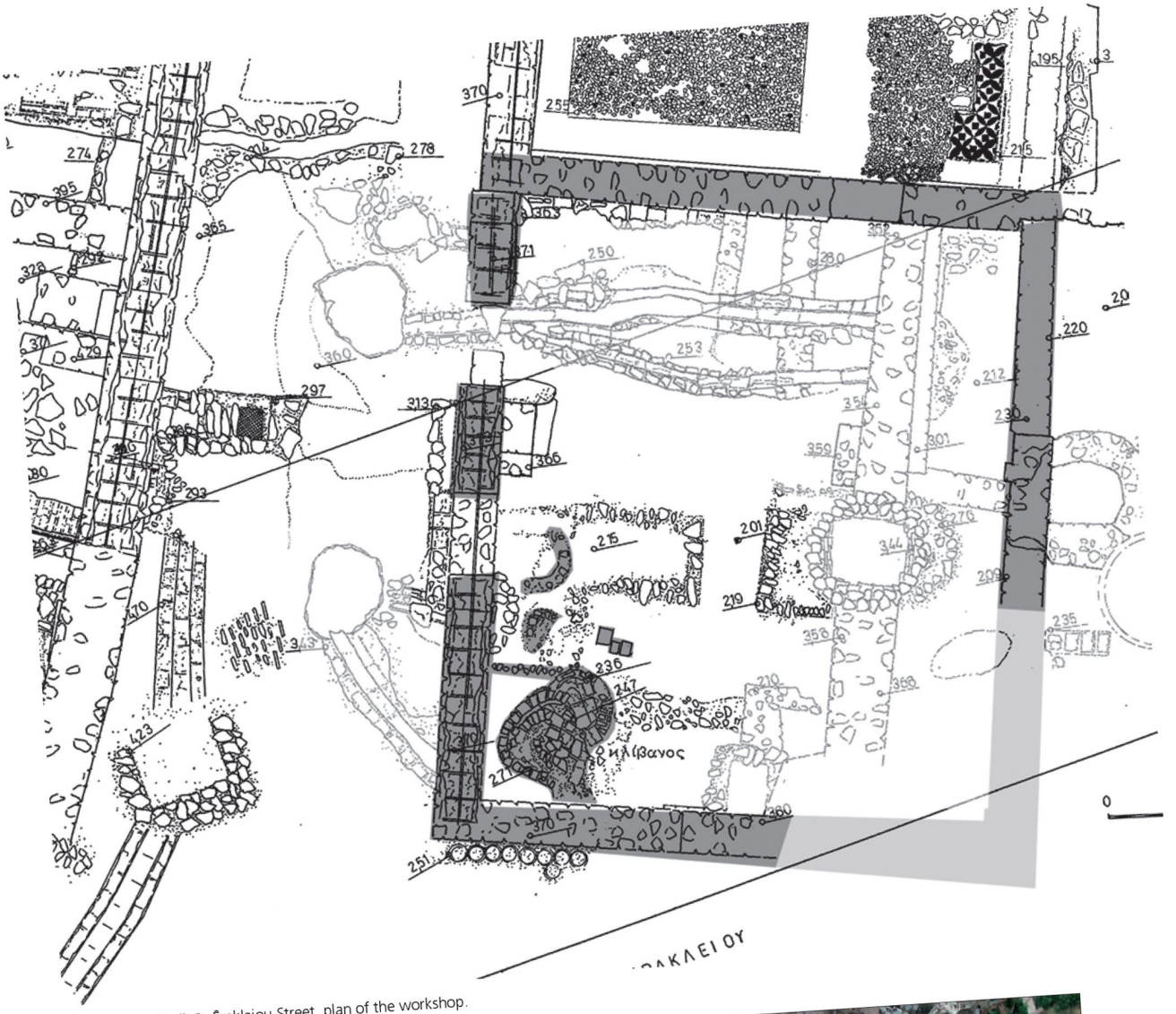


Fig. 264 45 Vasileōs Êrakleiou Street, plan of the workshop.



Fig. 265 45 Vasileōs Êrakleiou Street, general view of the excavation.



Fig. 266 45 Vasileōs Ērakleiou Street, view of the glass workshop from the north.



Fig. 267 45 Vasileōs Ērakleiou Street, view of the glass workshop's interior from the east.



Fig. 268 45 Vasileōs Ērakleiou Street, glass furnaces.



Fig. 269 45 Vasileōs Ērakleiou Street, glass furnaces.

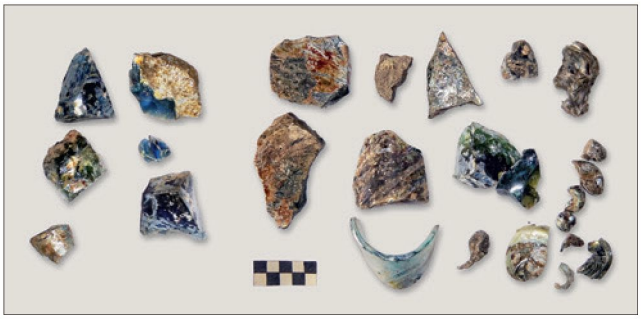


Fig. 270 45 Vasileōs Ērakleiou Street, chunks of raw glass and deformed masses.

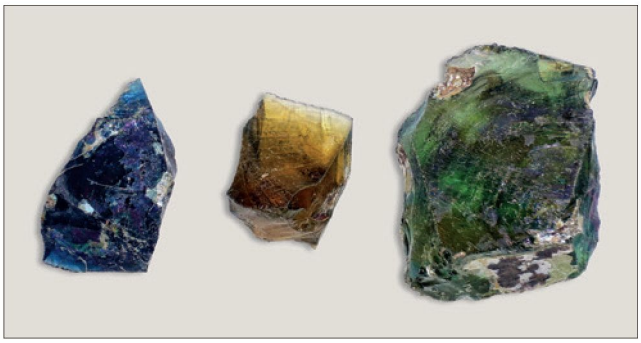


Fig. 271 45 Vasileōs Ērakleiou Street, chunks of raw glass.



Fig. 272 45 Vasileōs Ērakleiou Street, glass moils.



Fig. 273 45 Vasileōs Ērakleiou Street, raw glass chunks and workshop refuse.



Fig. 274 45 Vasileōs Ērakleiou Street, workshop refuse.



Fig. 275 45 Vasileōs Ērakleiou Street, deformed fragments of stemmed beakers.



Fig. 276 45 Vasileōs Ērakleiou Street, stamped bases of stemmed beakers.

65 **figs 227-228, 277-279**

Type: Glass workshop
City: Thessaloniki
Area: City centre (**map:** 8I)
Address: 3 Agapēs Street
Date: Middle Byzantine, probably eleventh century
Description: In the Middle Byzantine period, at least two houses were built on the site of an Early Christian house with mosaic floors and a small bath. The infill from this period contained several coins and much Middle Byzantine white-clay glazed tableware pottery vessels, and cooking pots dated to the last decade of the eleventh century. The site was turned into a cemetery during the Late Byzantine period. The workshop was located near the church of Hagia Sophia, at its north-east, and only movable finds connected with its activities have been unearthed. Apart from deformed glass masses, the more important and interesting finds are: loose glass tesserae; parts of a dark blue, discoid glass »cake« for the production of mosaic tesserae, made of low-temperature bubbly glass; and square and circular dark blue tiles decorated with pale white and red festoons, made of a high quality glass that is free of bubbles and other inclusions. These tiles can and probably should be connected with marble sculpture *intarsia*, like the ones in Constantinopolitan tenth century monuments, e. g. the Boukoleōn Palace, and probably already present in sixth century monuments, such as the churches of Saint Polyeuktos and Saint Euphemia. Furthermore, the same decorative motives appear on polychrome ware type I fragments found at the same site and in the same context. These products of the late tenth century were discarded in the last decade of the eleventh century.
Bibliography: Cat. Athens 2002, 119-120 no. 115a, dated generally to the Middle Byzantine period. – On the glass finds, see Antonaras, Production and Uses of Glass 189-198. – On the excavation see Kanonidēs, Agapēs 3, 490-493. – On the Middle Byzantine clay finds, see Kanonidēs, Mesovyzantinē ephyalōmenē keramikē 71-80. – For the decorative motive on clay tiles and its identification as a product of the Nikomedean workshops active from the early tenth to mid-eleventh centuries, see Gerstel, The Nikomedia Workshop passim esp. 49.



Fig. 277 3 Agapēs Street, deformed masses of glass.



Fig. 278 3 Agapēs Street, deformed masses of glass.

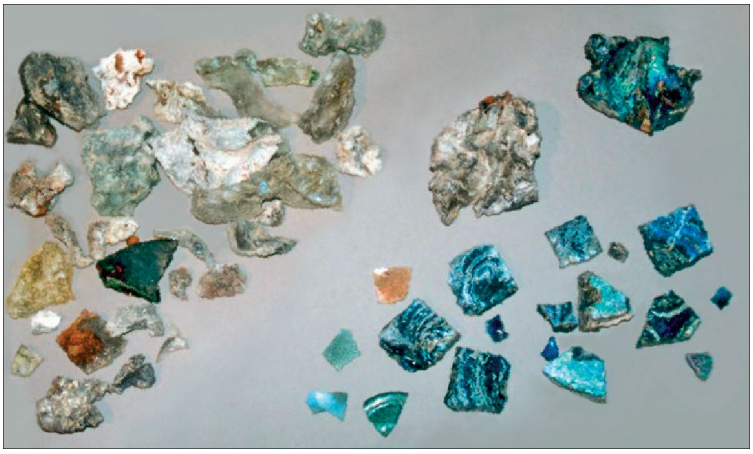


Fig. 279 3 Agapēs Street, deformed masses and plaques of glass.

66 **figs 280-291**

Type: Glass workshop

City: Thessaloniki

Area: City centre (**map:** 8h)

Address: Dioikētēriou Square, now Kypriōn Agōnistōn Square

Date: Mid-ninth century, or sixth to mid-seventh centuries

Description: Salvage excavations conducted in the square uncovered an entire Byzantine neighbourhood with a glass workshop (marked A in the plan) at the north-western part of the dig. Its main entrance opened on a secondary vertical road, one of the city's *cardines*, onto which opened its main entrance. The exact size of the area that it covered has not been archaeologically defined. The workshop was built on the ruins of a secular fifth-century building that had been destroyed in the middle of the sixth century. The archaeological evidence, including coins, indicates that it operated in the middle of the ninth century, although the archaeomagnetic signature of the furnace shows that it operated in the period between 517-659 AD. The most important find comprises the partly preserved, circular furnace (diam. 1.5 m, max. preserved height 0.90 m) with a central post supporting the floor of the firing chamber. It was built with rubble stone and lime mortar. The floor of the combustion chamber was covered with lime plaster, as was the one-metre-long fire-tunnel of the furnace. The floor was concave and the base of the single post that supported the floor of the firing chamber was partly preserved at its centre. The walls of the combustion chamber were covered with a dark green layer of glaze. Parts of the walls of the upper part of the structure were found in the fill of the furnace, these were parts of bricks with a layer of glazing, amorphous glass masses, fragments of glass vessels, and two parts of an iron rod, possibly representing remains of a glassworking tool. A small water reservoir, found 3.5 m to the east of the furnace, was also part of the workshop. A pit, 22 m to the east of the western end of the workshop, contained glass masses and fragments of deformed vessels (marked B in the plan). This detritus is assumed to come from the furnace; stemmed beakers and hanging lamps can be identified tentatively amongst the remains.

Bibliography: Kanonidēs, Plateia Dioikētēriou 518-520 illus. 7. – Kanonidēs, Periochē Dioikētēriou 567 illus. 2. – Kanonidēs, Anaskaphē ergastēriou yalourgias 143-153. – Spatharas et al., New Magnetic 134.

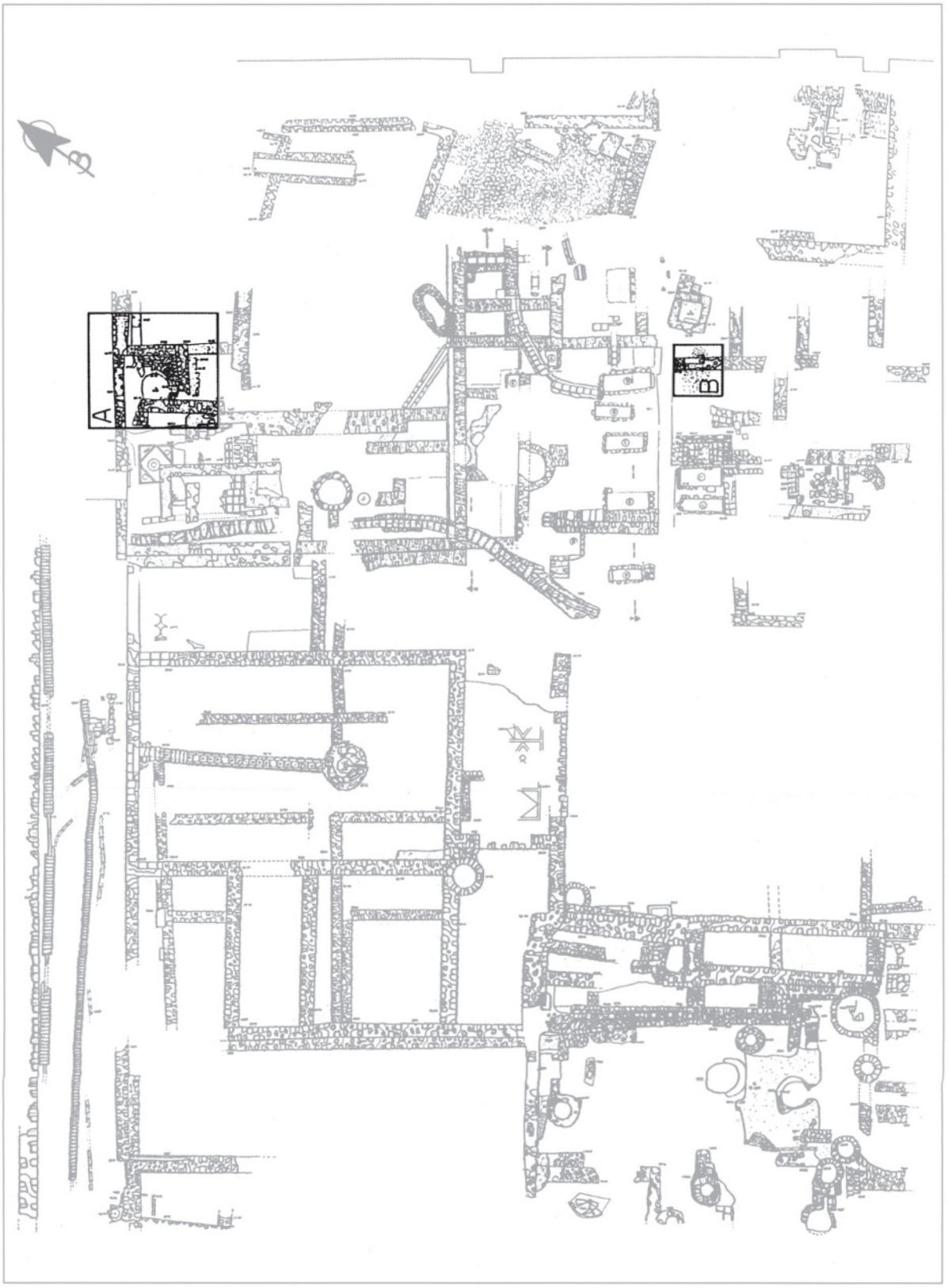


Fig. 280 Dioikētēriou Square, currently Kypriōn Agōniston Square, plan of the excavation where the glass workshop and the pit are marked as A and B.

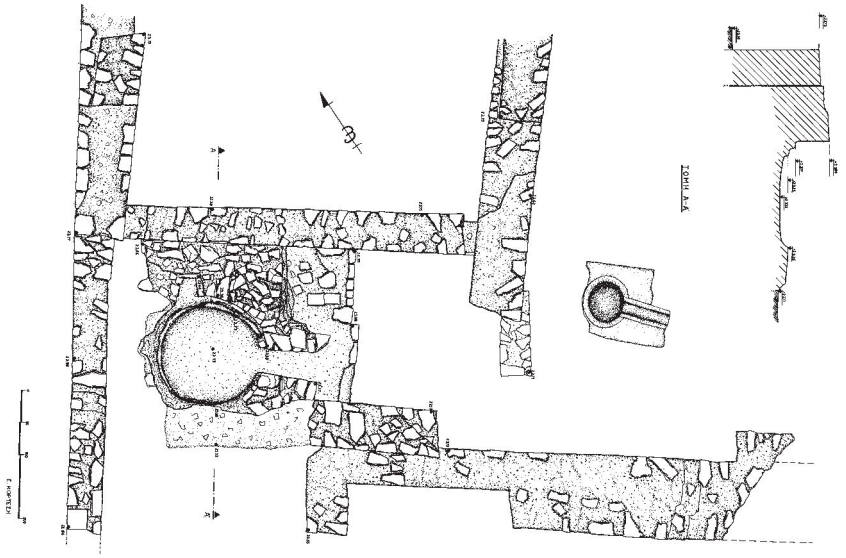


Fig. 281 Dioikētēriou Square, currently Kypriōn Agōniston Square, plan of the workshop.

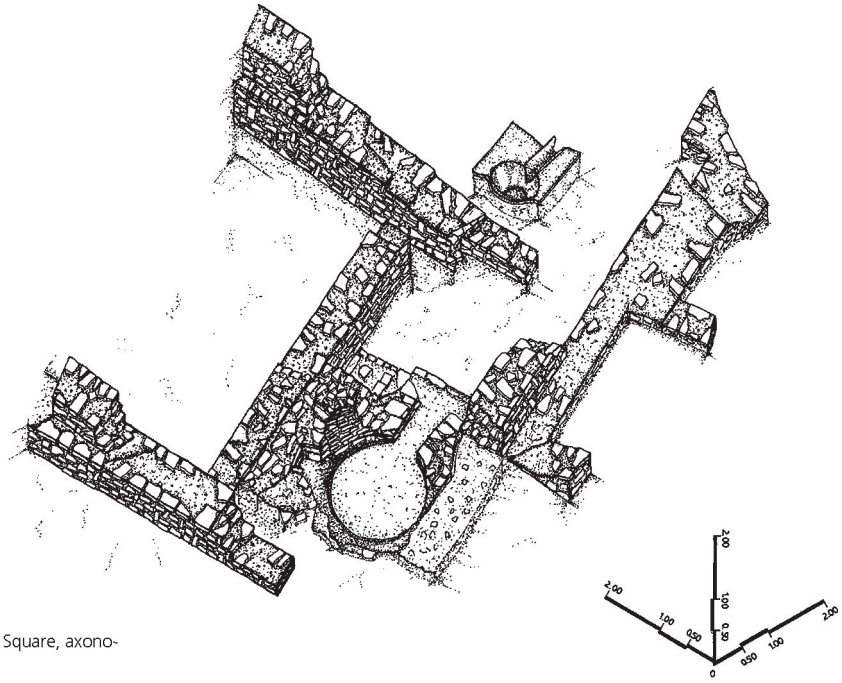


Fig. 282 Dioikētēriou Square, currently Kypriōn Agōniston Square, axonometric projection of the workshop.



Fig. 283 Dioikētēriou Square, currently Kypriōn Agōniston Square, view of the furnace.



Fig. 284 Dioikētēriou Square, currently Kypriōn Agōniston Square, view of the furnace.



Fig. 285 Dioikētēriou Square, currently Kypriōn Agōniston Square, parts of the furnace and masses of glass.

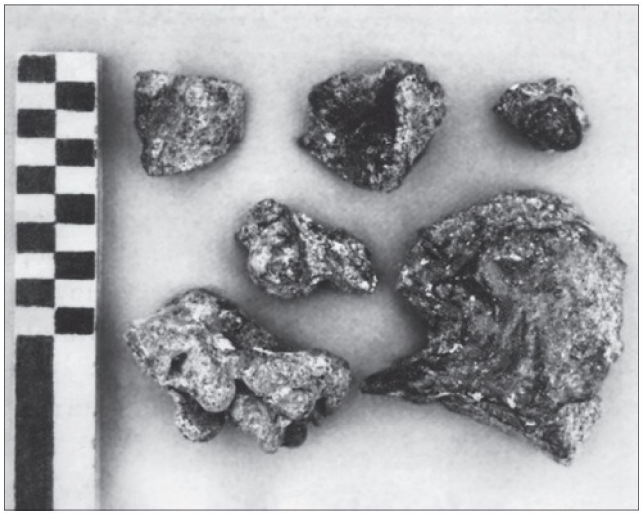


Fig. 286 Dioikētēriou Square, currently Kypriōn Agōniston Square, deformed glass masses.

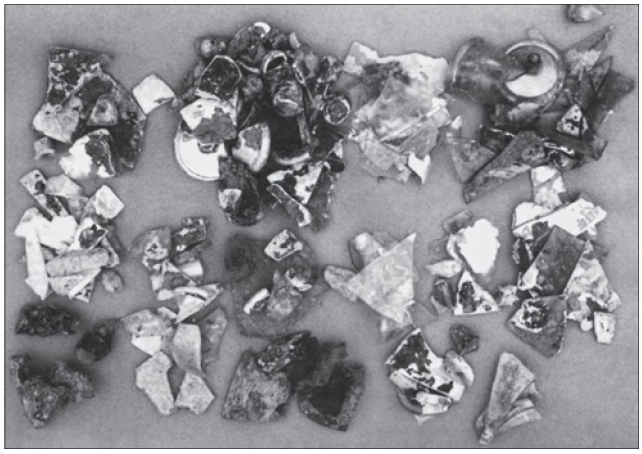


Fig. 289 Dioikētēriou Square, currently Kypriōn Agōniston Square, wasters and masses of glass from the fill of the furnace.



Fig. 287 Dioikētēriou Square, currently Kypriōn Agōniston Square, deformed glass masses.



Fig. 290 Dioikētēriou Square, currently Kypriōn Agōniston Square, wasters and masses of glass from the fill of the furnace.



Fig. 288 Dioikētēriou Square, currently Kypriōn Agōniston Square, deformed glass masses.

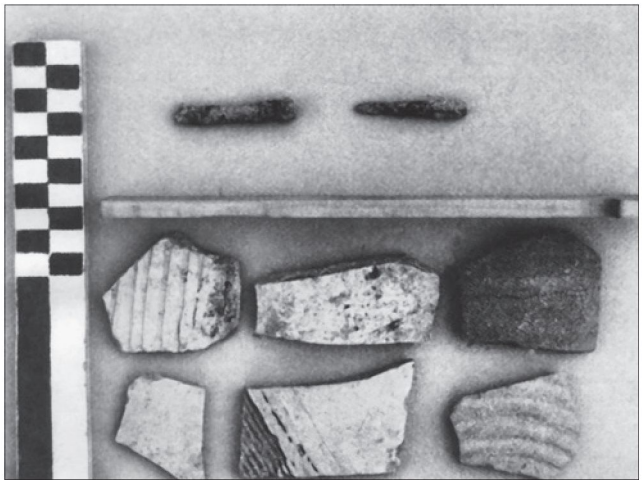


Fig. 291 Dioikētēriou Square, currently Kypriōn Agōniston Square, clay vessels from furnace's fill and sections of an iron bar, interpreted as a possible blowpipe.

Workshops of Undetermined Use with Kiln

67 figs 65-66

Type: Workshop of undetermined use including use of fire
City: Thessaloniki
Area: City centre (**map:** 10j)
Address: 24 Tsimiskē Street, Stoa Hirsch
Date: Middle Byzantine (seventh to twelfth centuries)
Description: At least two, double-roomed workshops with kilns and wells, dated after the seventh century and prior to the twelfth century, have been excavated on this site near the waterfront and sea wall in the direction of the port. One of the kilns was also used as a lime kiln. The area between the Early Christian sea wall, which was in use until 620-630, and the wall built on Proxenou Koromēla Street dated after the earthquakes of the mid-seventh century or even after the sack of the city in 904 AD, was used for the construction of the workshops with their kilns and wells.
Bibliography: Tsimpidou-Avlōnitē/Lykidou/Euthymoglou, Nea stoicheia 262-272. – On the sea walls and the topography of the site, see also Bakirtzēs, Thalassia ochyrōsē 329. – Velenēs, Ta teichē 132-133.

Water Mills

68 figs 292-295

Type: Water mills
Village: Between Peristera, Vasilika and Lakkia
Area: Near the Grammoustikeia watercourse
Address: Ropalaia site
Date: Sixth to fifteenth centuries
Description: The Bishopric of Thessaloniki, among its other possessions, owned a number of water mills and large tracts of land from the sixth or seventh centuries onwards at the site of the Ropalaia (Ροπαλαία) near the Byzantine village of Hagia Euphēmia (Ἁγία Εὐφημία) (modern Lakkia), east of Thessaloniki.
Bibliography: Theodōridēs, To ktēmatologio 417-418. – On the site see Lefort, Villages de Macedoine 136-38. – On the mills, see Sampanopoulou, Katalogos 91-92, where all prior bibliography and the economy of the site are commented upon.

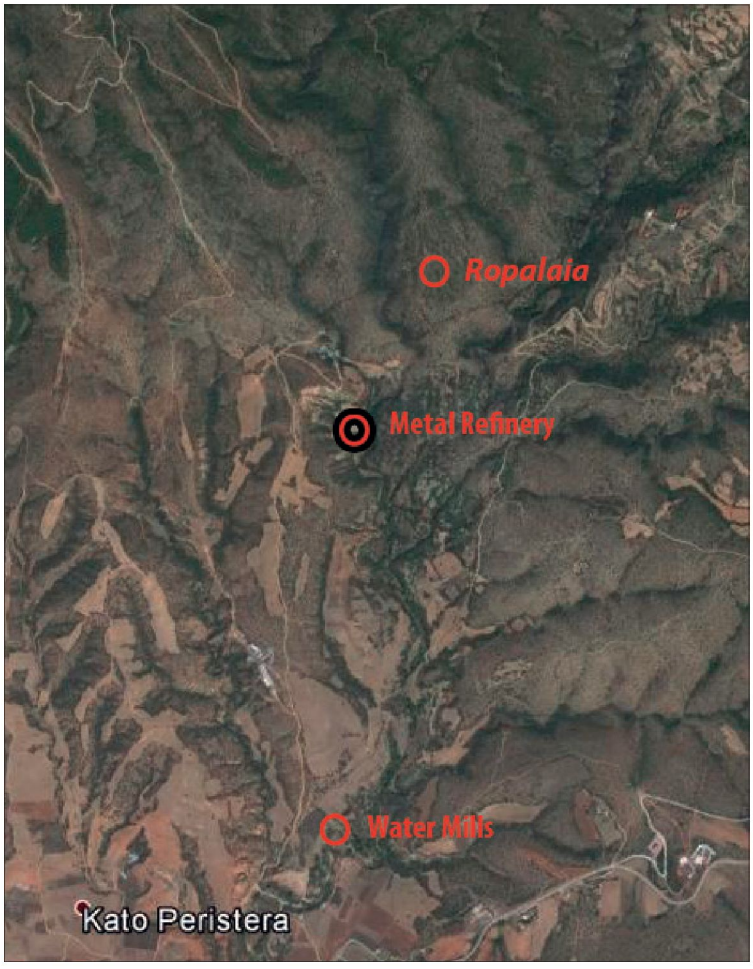


Fig. 292 Vasilika, Ropalaia site, map of the area with the archaeological sites marked (from: Googlemaps) .





Fig. 293 Vasilika, Ropalaia site, views of the mill's ruins.



Fig. 294 Vasilika, Ropalaia site, views of the mill's ruins.



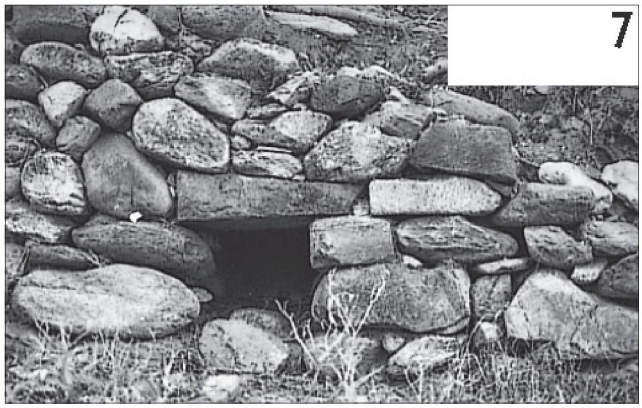
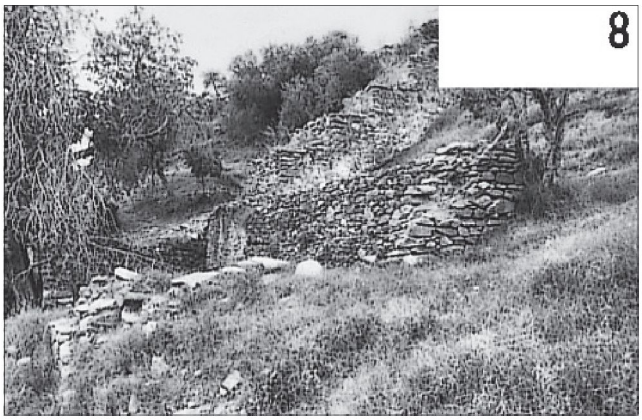


Fig. 295 Vasilika, Ropalaia site, views of the mill's ruins.



69 **figs 296-300**

Type: Water mills

City: Thessaloniki

Area: Retziki-Polichnē watercourse

Address: Meteōra site

Period: Middle and Late Byzantine period, probably eleventh to thirteenth centuries

Description: Twelve water mills were discovered on the banks of this watercourse. Five of them were concentrated at the site of Meteōra where minor confluents met the main stream, therefore, supplying them with two different water sources. Originally, they were all dated to the fourteenth century, but have been subsequently re-dated more precisely. Three of them are dated to the Byzantine period and have vertical water towers and horizontal wheels. These are mills no. 6 and no. 7, dated to the twelfth to thirteenth centuries; and no. 5, dated to the end of the eleventh century or the beginning of the twelfth century. Two are Post-Byzantine and their water towers have stepped façades. Mills no. 2 and no. 3 bear Post-Byzantine technological characteristics, although they also preserve traces of an older phase of construction. The remains of mill no. 5 comprise parts of a built water reservoir; a triangular-shaped pipe taking water to the tower; a water tower (4 m × 4 m, height 8 m) with an internal, vertical, circular, wedge-shaped pipe; and remains of the wheel room. The remains of mill no. 6 comprise parts of a built water reservoir coated internally with hydraulic plaster; a triangular-shaped pipe taking water to the tower; a water tower (3.7 m × 6.5 m, height 8 m) with a vertical, internal circular pipe; and remains of a room with the mech-

anism and grinding rooms. Mill no. 7 was supplied with the water from mill no. 6 and it did not have its own reservoir. The water tower (3 m × 3 m, max. preserved height 6 m), the wheel room and the grinding rooms are preserved. Two more fourteenth-century water mills stand on the banks of the Retziki watercourse. They are located at places where minor confluents met the main stream, providing two different water sources. They have vertical water towers flanked at the edges of their façade with supporting pilasters and a vertical, internal circular pipe.

Bibliography: Siaxampanē, Vyzantina ichnē 86. – Siaxampanē, Neromyloi 116-120. – Siaxambani, Watermills from Polichni 338-341. – Symalidou, Vyzantinoi neromyloi Polichnēs 19-31 figs 1-8. – Toska, Polichni 505-508. – Raptēs, Ergastēria 95-96, where they are described in detail with a discussion of their dating.

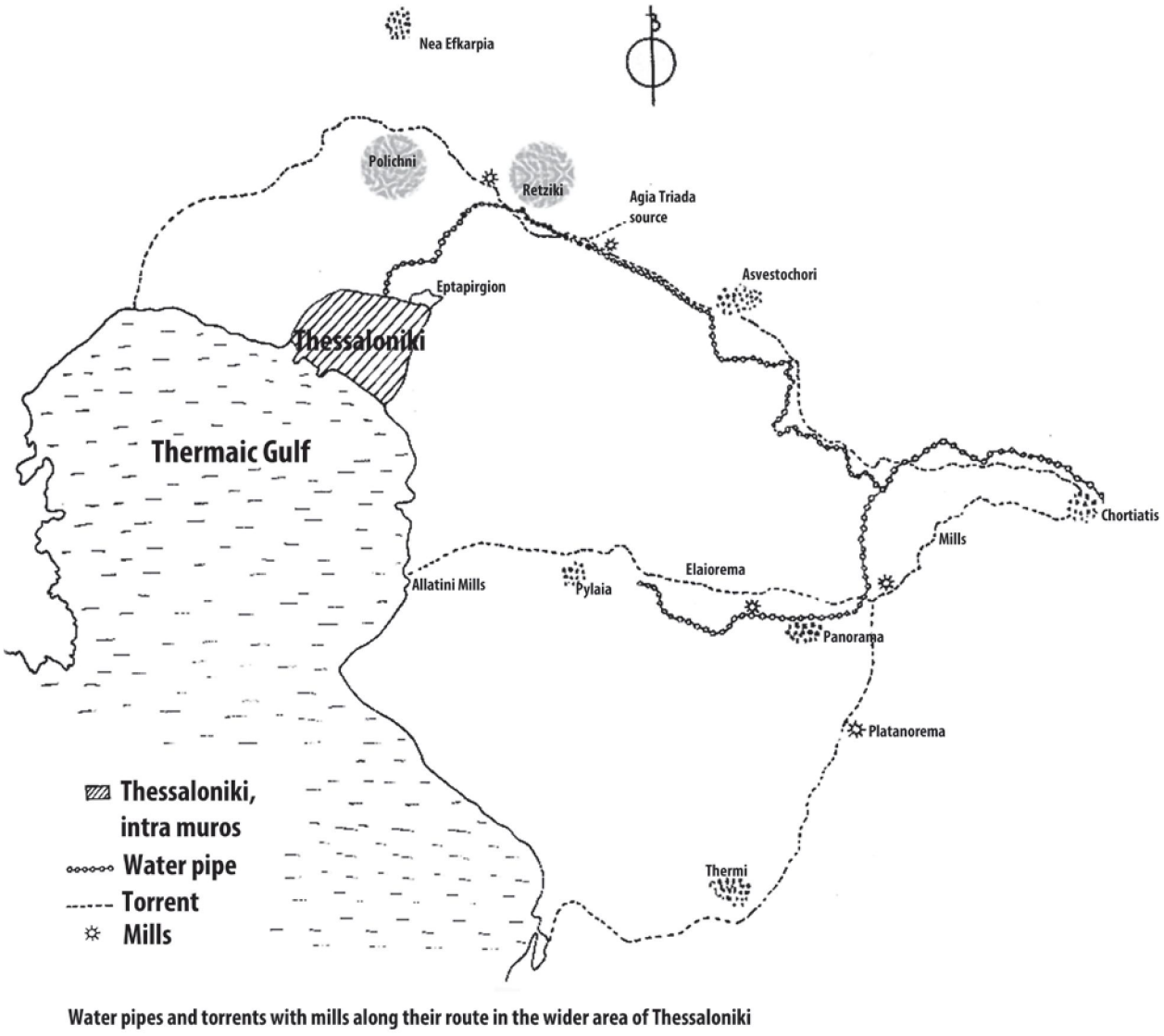


Fig. 296 Retziki-Polichnē watercourse, Meteōra site, map of the area around Thessaloniki with the sites of the water mills marked.

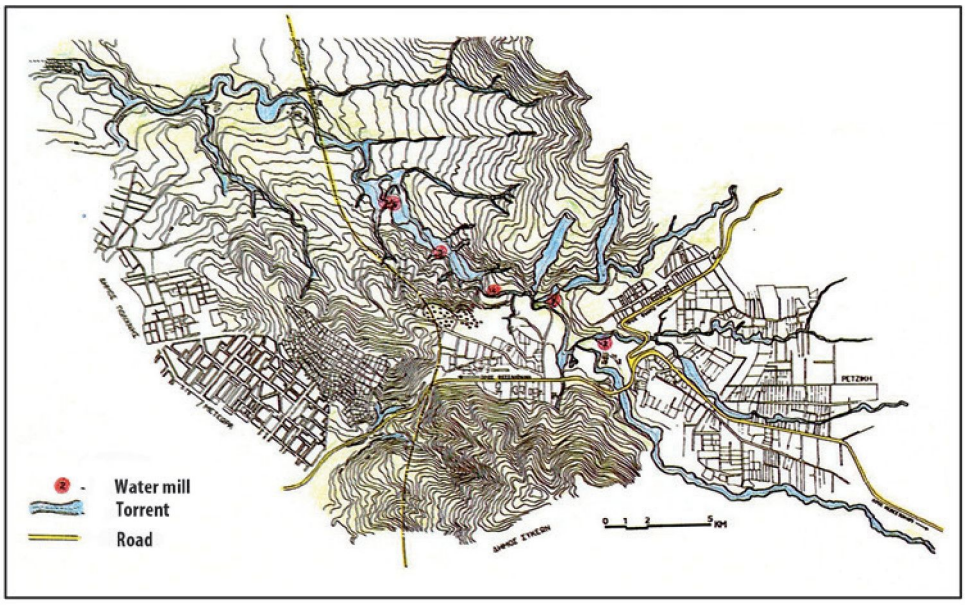


Fig. 297 Retziki-Polichnē watercourse, Meteōra site, topographic plan of the Polichnē watercourse with the sites of the water mills marked.



Fig. 298 Retziki-Polichnē watercourse, Meteōra site, view of the water tower.

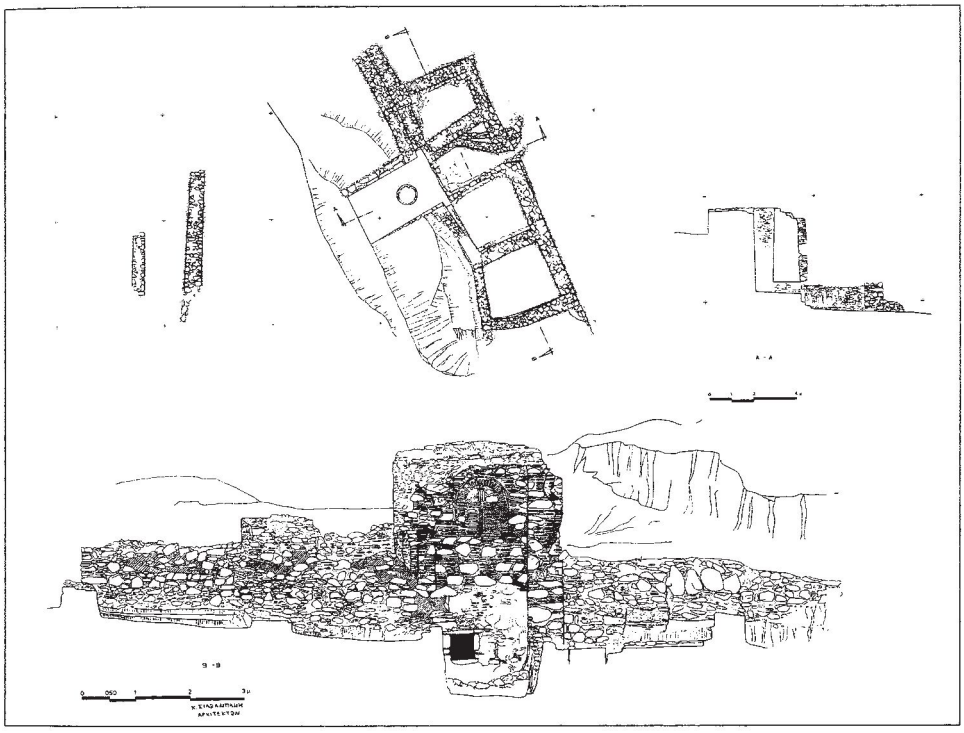


Fig. 299 Retziki-Polichnē watercourse, Meteōra site, plan and section of the water mill.

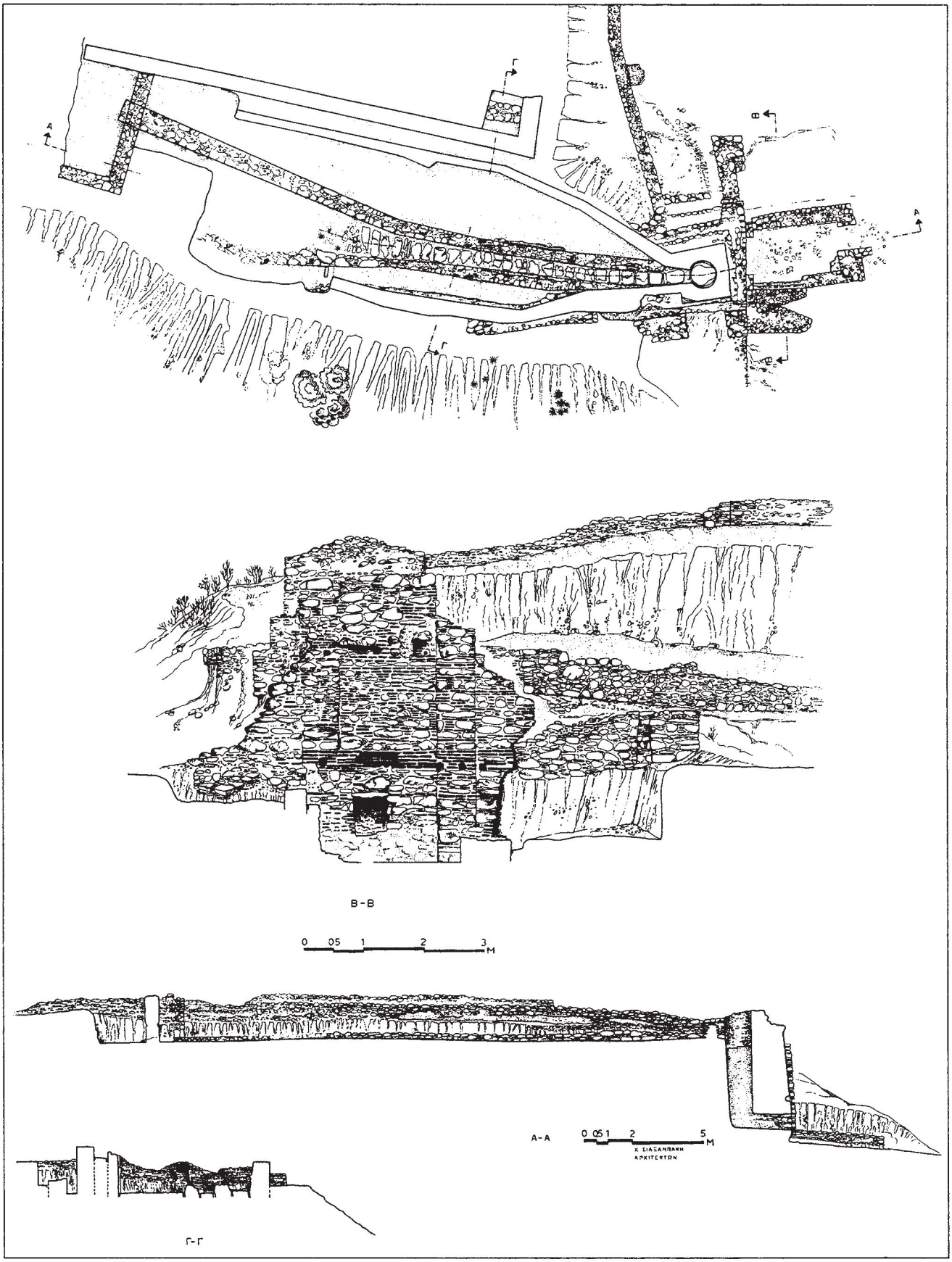


Fig. 300 Retziki-Polichnē watercourse, Meteōra site, plan, section and axonometric projection of the water mill.

70 **fig. 301**

Type: Water mills
City: Thessaloniki
Area: Panorama, Platanorema
Address: Platanakia site
Date: Fourteenth to fifteenth centuries
Description: Twenty-five water mills, organised in groups, existed on the banks of Platanorema and Elaiorema streams that flank Panorama, to the north-east of Thessaloniki. Three mills were found at the Platanakia site. They have a triangular water channel, a water tower with external reinforcing pilasters at the corners of their façade and a circular, vertical pipe of variable diameter. Only one of them has been excavated (3 m × 3 m, height c. 5 m), which was supplied with water that came from a nearby water mill that had its own water reservoir.
Bibliography: Kordomenidēs, Neromyloi Makedonias 59-62 esp. 60. – Siaxampanē, Neromyloi 117-120 illus. p. 114-115. – Siaxambani, Watermills from Polichni 338-340. – Raptēs, Ergastēria 96-97, where the finds are described in detail with further bibliography.

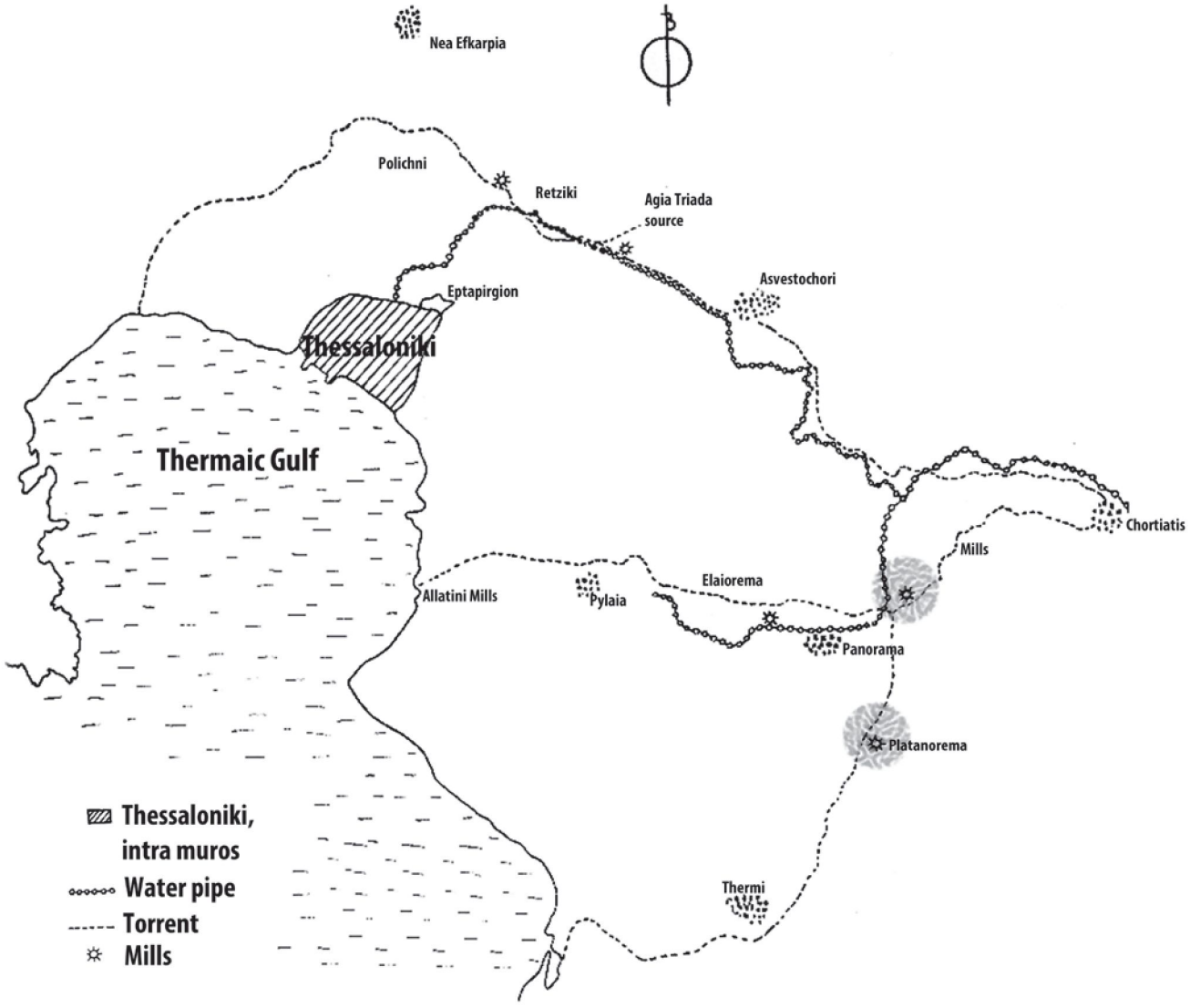


Fig. 301 Panorama, Platanorema, Platanakia site, map of the area around Thessaloniki with the sites of the water mills marked.



Fig. 303 8 Vlachava Street, view of the water tower.

71 **figs 302-303**
Type: Water mills
City: Thessaloniki
Area: Upper city, Koule Kafe (**map:** 6j)
Address: 8 Vlachava Street
Date: Late Byzantine period
Description: A cubical water tower (3.50 m × 3.60 m × 2.80 m) was unearthed during the salvage excavation conducted on this site in the upper part of the city. It was built with rubble stones and mortar, and occasionally roof tiles were inserted between the rubble, decorated with a register of three rows of bricks. The interior walls of the tower and its floor were covered with hydraulic mortar and it was connected with a system of pipes, one of lead and several of clay. The tower was part of a larger workshop of which an external enclosure wall (preserved length 22 m, preserved height 1.50 m, width 0.80 m), part of a clay pavement and a built well have been excavated.
Bibliography: Markē, Anaskaphōn eranismata 249 fig. 7.

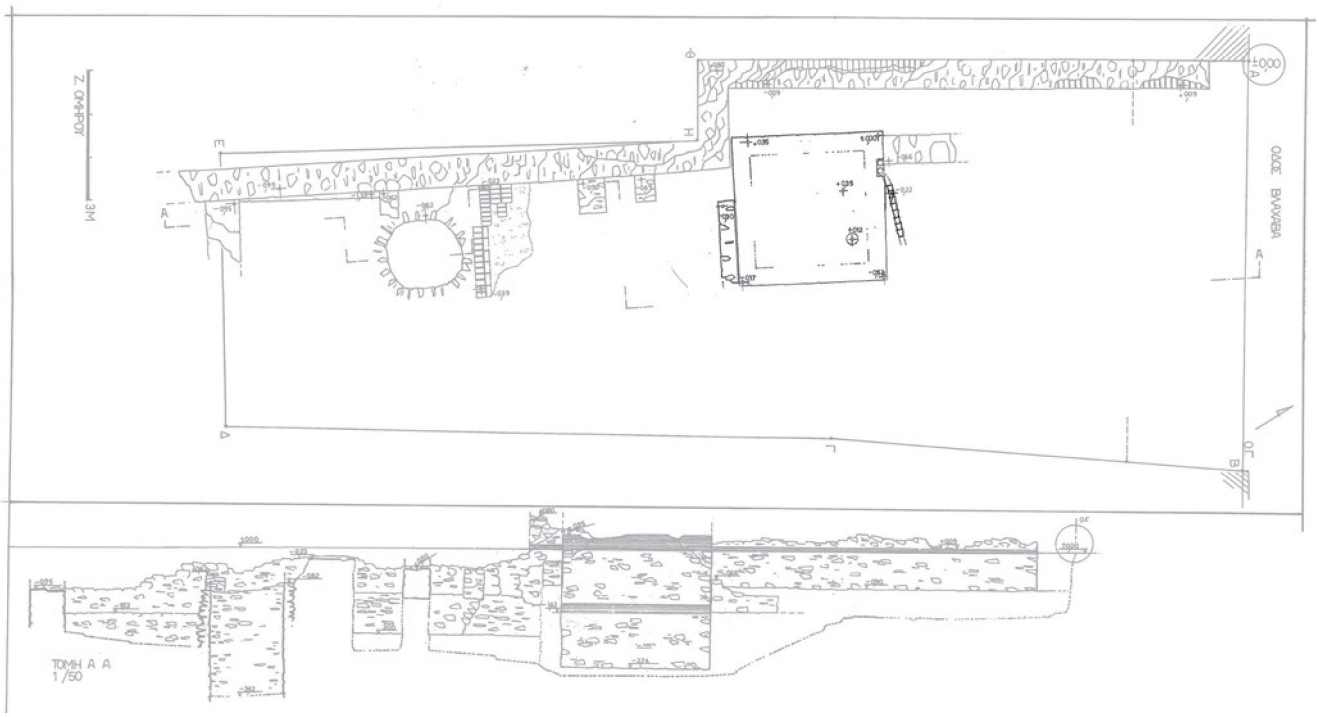


Fig. 302 8 Vlachava Street, plan of the excavation.

Wine Presses

72 **figs 304-306**
Type: Wine press
City: Ōraiokastro
Area: Palaiokastro
Address: Zakynthou and Stanisē Street
Date: Late sixth to early seventh centuries
Description: In the warehouse of a fortified, fifth-century *villa rustica* at Palaiokastro, west of Thessaloniki, a reservoir (2.60 m × 2 m × 1.15 m) and part of a wine press were discovered and dated to the late sixth century or early seventh century. Still surviving are stairs and a clearing hole in the floor that was covered with a late-sixth-century marble panel and hydraulic mortar.
Bibliography: Markē/Akrivopoulou, Anaskaphē agrepaulēs 283-298. – Cat. Thessaloniki 2003, 8-9.

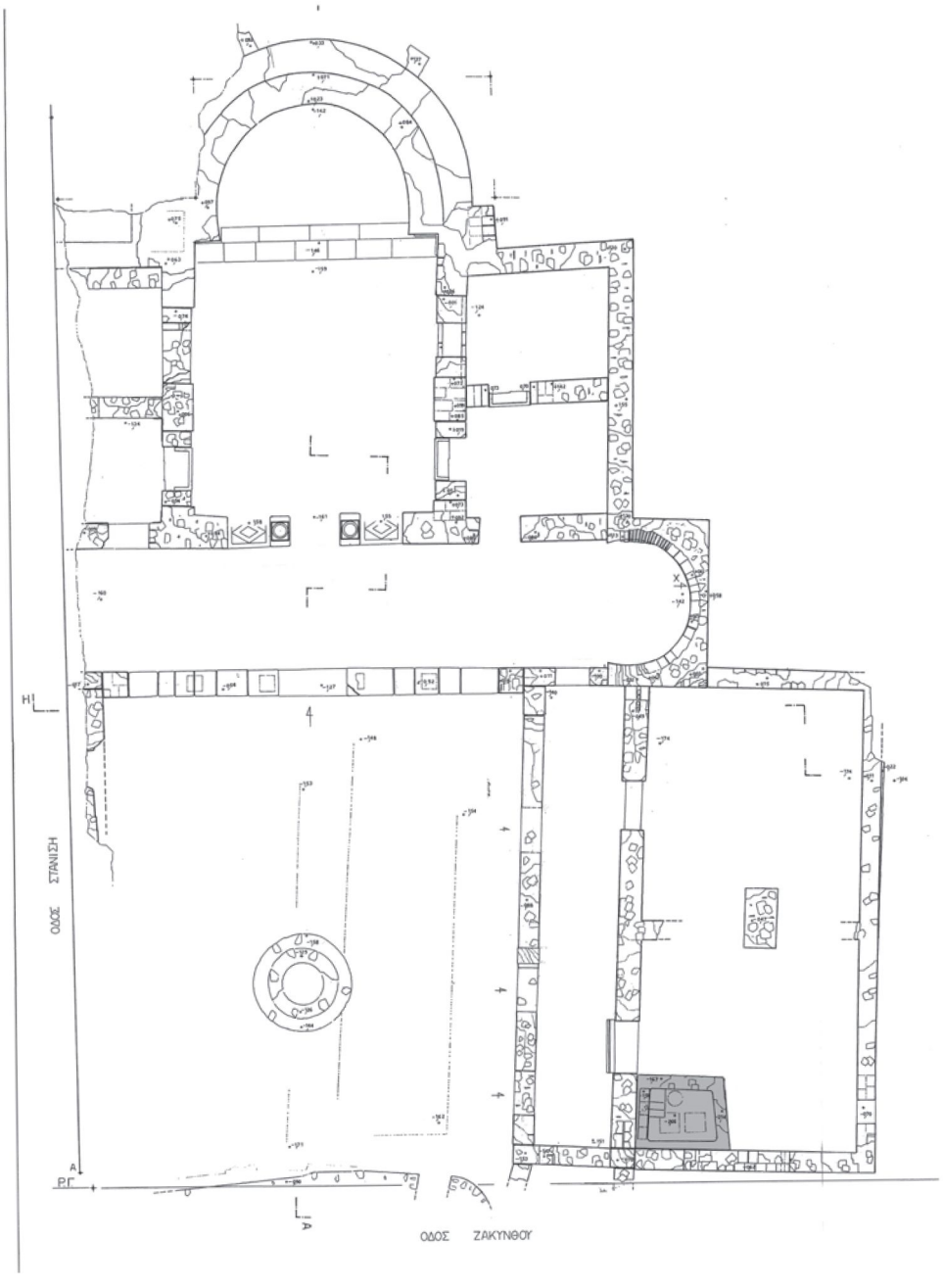


Fig. 304 Zakynthou and Stanisē Street, Ōraiokastro, plan.

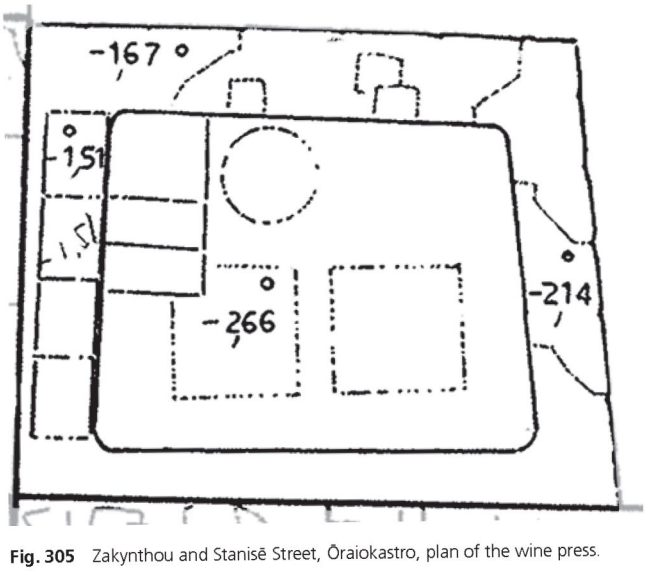


Fig. 305 Zakynthou and Stanisē Street, Ōraiokastro, plan of the wine press.



Fig. 306 Zakynthou and Stanisē Street, Ōraiokastro, marble closure-slab embedded in the floor of the wine press.



Fig. 308 Evangelistrias Cemetery, formerly Lyssiatreion Clinic, view of the burial building that was transformed into a wine press.



Fig. 309 Evangelistrias Cemetery, formerly Lyssiatreion Clinic, detail of the wine press.

73 **figs 307-309**

Type: Wine press

City: Thessaloniki

Area: Eastern Necropolis (**map:** 5I)

Address: Evangelistrias Cemetery, formerly the Lyssiatreion Clinic

Date: Early Byzantine

Description: After its destruction in the Early Byzantine period, a square burial monument (12 m × 8.40 m) in the eastern necropolis, was partly transformed into an installation for the production of wine. The eastern leg of the cross-shaped building was enclosed with a small wall, coated with hydraulic mortar and turned into a reservoir. The contents of the reservoir could be drained through a hole on its west side via a short pipe (length 0.70 m, diam. 0.15 m × 0.10 m) fed into a well-shaped pit (0.90 m × 0.80 m; depth 0.90 m), dug in the central chamber of the building. In the centre of this pit there is a hemispherical depression to collect the sediment, allowing the contents of the reservoir to be drawn off it. Traces of a similar reservoir are visible in the compartment in the western leg of the cross-shaped building. It seems that the transformation of the use of the building occurred after the destruction of the eastern necropolis during the Early Byzantine period.

Bibliography: For the excavation, see Pelekanidou, Euangelistria 534-535. – For the identification of its later use in wine making, see Raptēs, Ergastēria 111-112. – Also Raptēs et al., Skepseis kai paratērēseis 472 fig. 5.

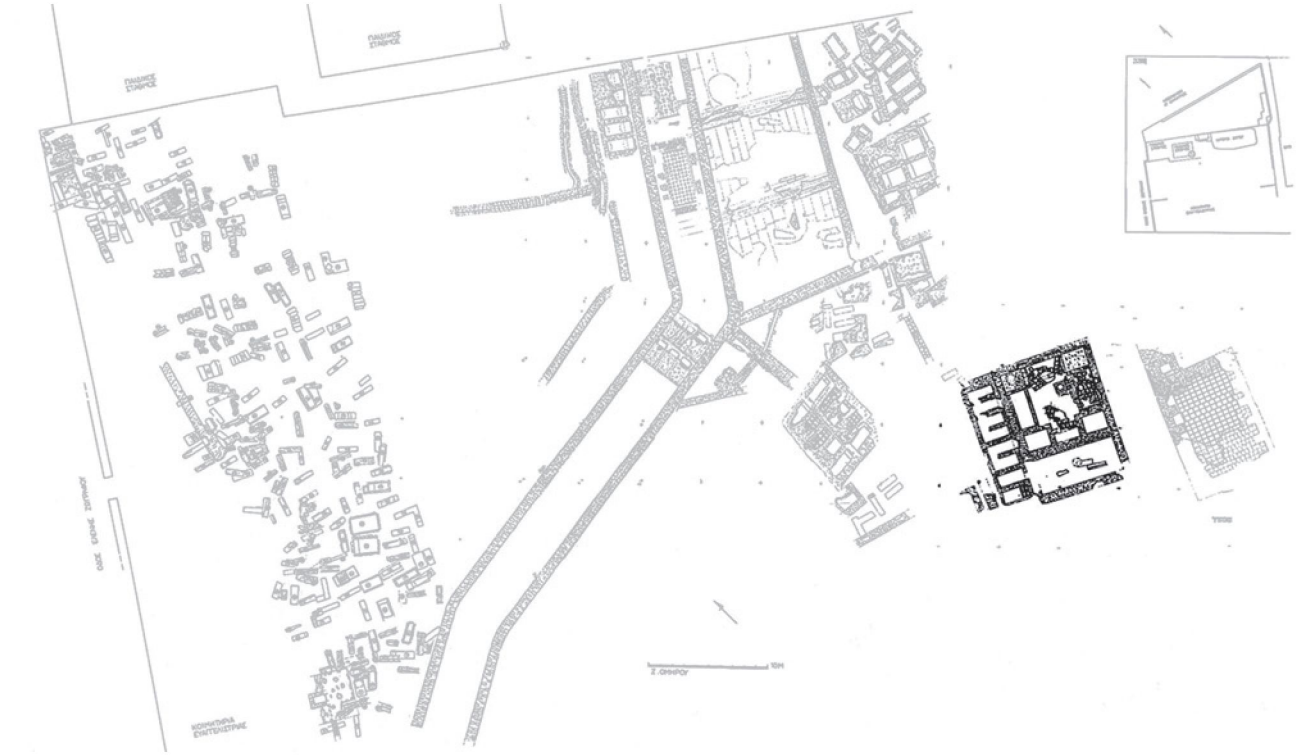


Fig. 307 Evangelistrias Cemetery, formerly Lyssiatreion Clinic, plan of the excavation.

74 figs 296-297

Type: Wine press
City: Thessaloniki
Area: Retziki-Polichnē watercourse
Address: Meteōra site
Date: Middle to Late Byzantine, probably twelfth to thirteenth centuries
Description: A reservoir assumed to belong to an installation for the production of wine was discovered at the site of the water mills in the Meteōra area. On the other finds of the site, see **cat. no. 69**.
Bibliography: Siaxampanē, Vyzantina ichnē 86. – Siaxambani, Watermills from Polichni 338-341 esp. 341. – Raptēs, Ergastēria 113.

75 figs 310-311

Type: Wine press
City: Thessaloniki
Area: East end (**map:** 5I)
Address: Kastrōn Street
Date: Probably Byzantine period
Description: A wine press (1.95 m × 1.40 m), internally coated with hydraulic mortar, was discovered during salvage excavations on Kastrōn Street, north of the Olympiados and running up to Achilleōs Street. A 200-metre-long section of the eastern city wall and two of its square towers were revealed. From the archaeological evidence, the press was constructed at a later time on the east side of the wall by the northern tower.
Bibliography: Cat. Thessaloniki 2003a, 5.



Fig. 310 Kastrōn Street, plan of the area.

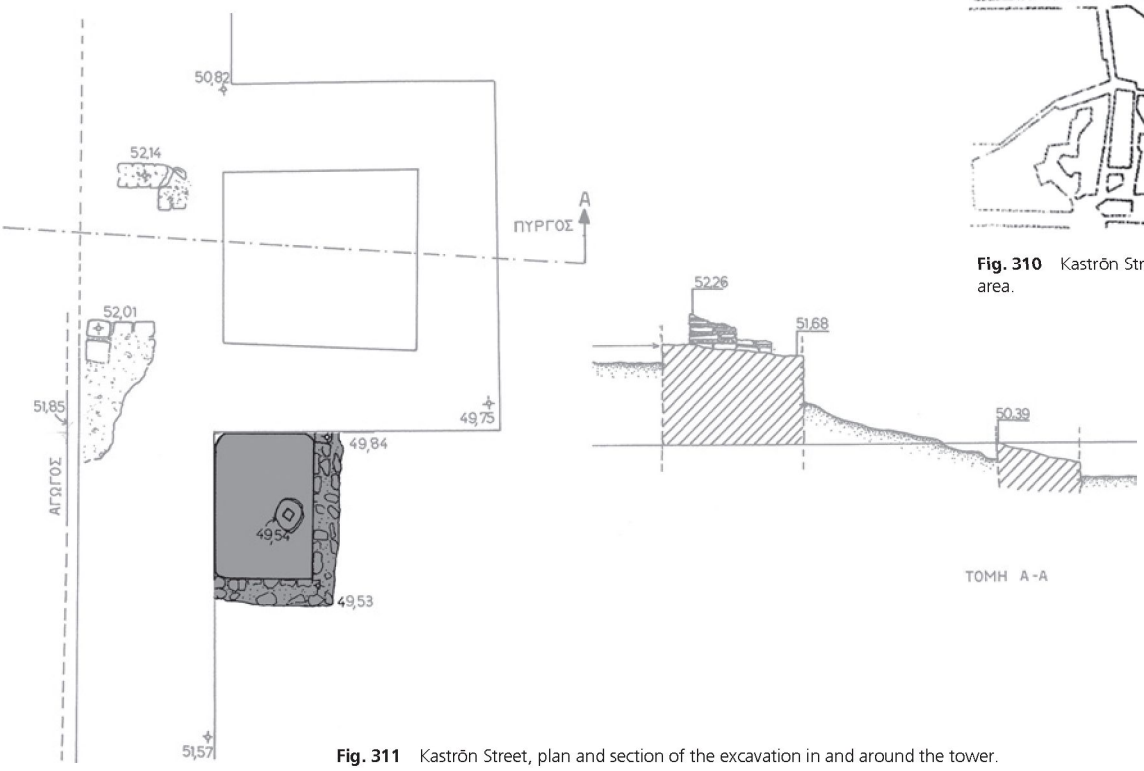


Fig. 311 Kastrōn Street, plan and section of the excavation in and around the tower.

76 **figs 292, 312-315**

Type: Mining/metalworking/metal refinery

City/Village: Peristera

Area: South of Peristera, near the Grammoustikeia watercourse

Address: Asēmomylos, probably corresponding to the *Tzechlianē* or *Ropalaia* site

Date: Sixth to fifteenth centuries

Description: The Bishopric of Thessaloniki owned a metal refinery, possibly for gold, from the sixth or seventh centuries onwards at the site of the Ropalaia (Ροπαλαία) near the Byzantine village of Hagia Euphēmia (Ἁγία Εὐφημία) (modern Lakkia), east of Thessaloniki. A group of artisanal installations exploiting the abundance of water along the watercourse west of Peristera can be dated to the Early to Late Byzantine periods. Important ruins have been found on the eastern bank on the site of the *Asēmomylos* (Ἀσημόμυλος), i.e. »silver mill«, close to a water mill. These ruins have been interpreted as the central part of an ore refinery, most probably for washing alluvial gold. Enormous piles of stones in the area are evidence of the mining activity that took place here. Pottery finds from the excavation define the construction period of the installation between the fifth and sixth century, and its abandonment after the fifteenth or sixteenth century. The main building is trapezoid (30 m long and 8 m wide at the smaller base). Its floor was of compacted earth and it has been assumed that it was not entirely roofed. A built water pipe (16 cm wide), floored with *tegulae* (flat roof tiles), traverses the building diagonally and ends in a built manhole (45 cm × 50 cm) at the south-east. The last two metres of the pipe are constructed with clay pipes, as are the pipes that begin from the manhole and flow from a considerable height into two external reservoirs. The southern and smaller of the two reservoirs (1.50 m × 1.10 m) is a simple one. The eastern, larger one (4.30 m × 3.20 m) is a heated water reservoir with a system of hypocausts under its floor and in the middle of its long northern side. Over the fire-tunnel, a base for a metal cauldron had been constructed.

Bibliography: Theocharidou, Enkatastasē 27-28. – Theocharidou, Orycheio Peristeras 408. – Theodōridēs, To ktēmatologio 417. – For an overiew of the finds, the economy and topography of the site, see Sampanopoulou, Katalogos 91-92.

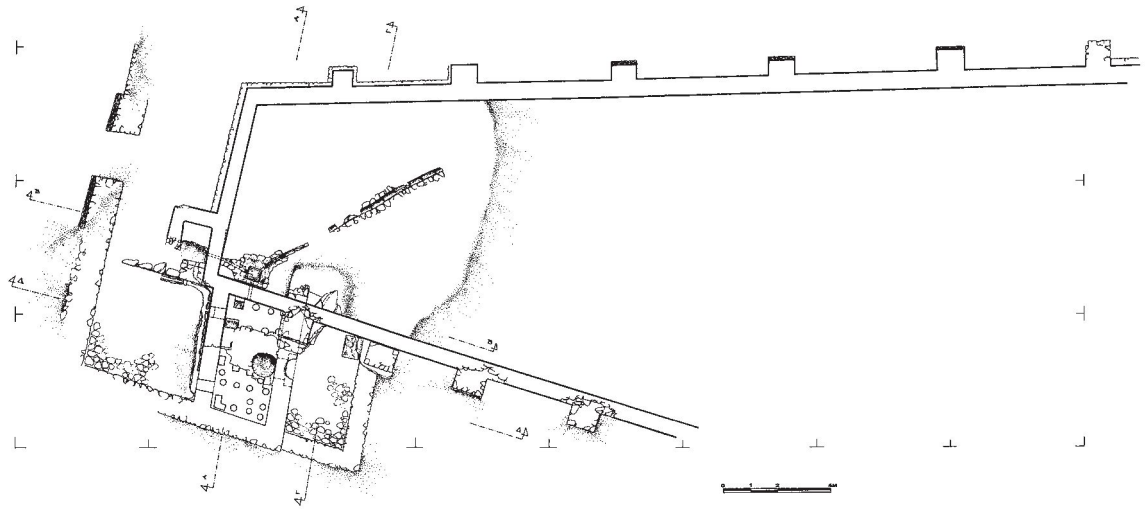


Fig. 312 Peristera, Grammoustikeia watercourse, plan of the metal refinery excavation.



Fig. 313 Peristera, Grammoustikeia watercourse, views of the metal refinery.



Fig. 314 Peristera, Grammoustikeia watercourse, views of the metal refinery.

Dyeworks

77 fig. 109

Type: Dyeworks, purple dyeing
City: Thessaloniki
Area: City centre (**map:** 9l)
Address: Nauarinou Square, Galerius' complex
Date: Second or first century BC to first century AD
Description: An artisanal complex was found during the excavations conducted under the palace of Galerius (**cat. nos 15, 27, 45**). Among the other industries, it appears that also a dyeworks existed. Its presence is indicated by the large number of murex shells and the remains of dyeing substances in clay sherds that were found on the site. The finds are dated to the period between the second or first century BC and the first century AD.
Bibliography: Karamperē / Christodoulidou / Kaïafa, To anaskaphiko ergo 533-534.



Fig. 315 Peristera, Grammoustikeia watercourse, views of the metal refinery.

78 figs 316-318

Type: Dyeworks
City: Thessaloniki
Area: City centre (**map:** 6j)
Address: 75 Agias Sophias Street
Date: Fourth to fifth centuries
Description: A workshop complex was found in the area close to the Hagia Sophia, in the salvage excavation conducted at 75 Agias Sophias Street. The installation is dated to the fourth century or the early fifth century. The complex was equipped with a system of water pipes and a circular well-like, vaulted structure (diam. 1.10 m, preserved height 3 m) that has a drain feeding into a pipe. The large number of loom weights found in the area of the workshop indicate that it was used for weaving and thread dyeing.
Bibliography: Karydas, Anaskaphes Agias Sophias 75, 251-262 esp. 252-254 figs 3-4.

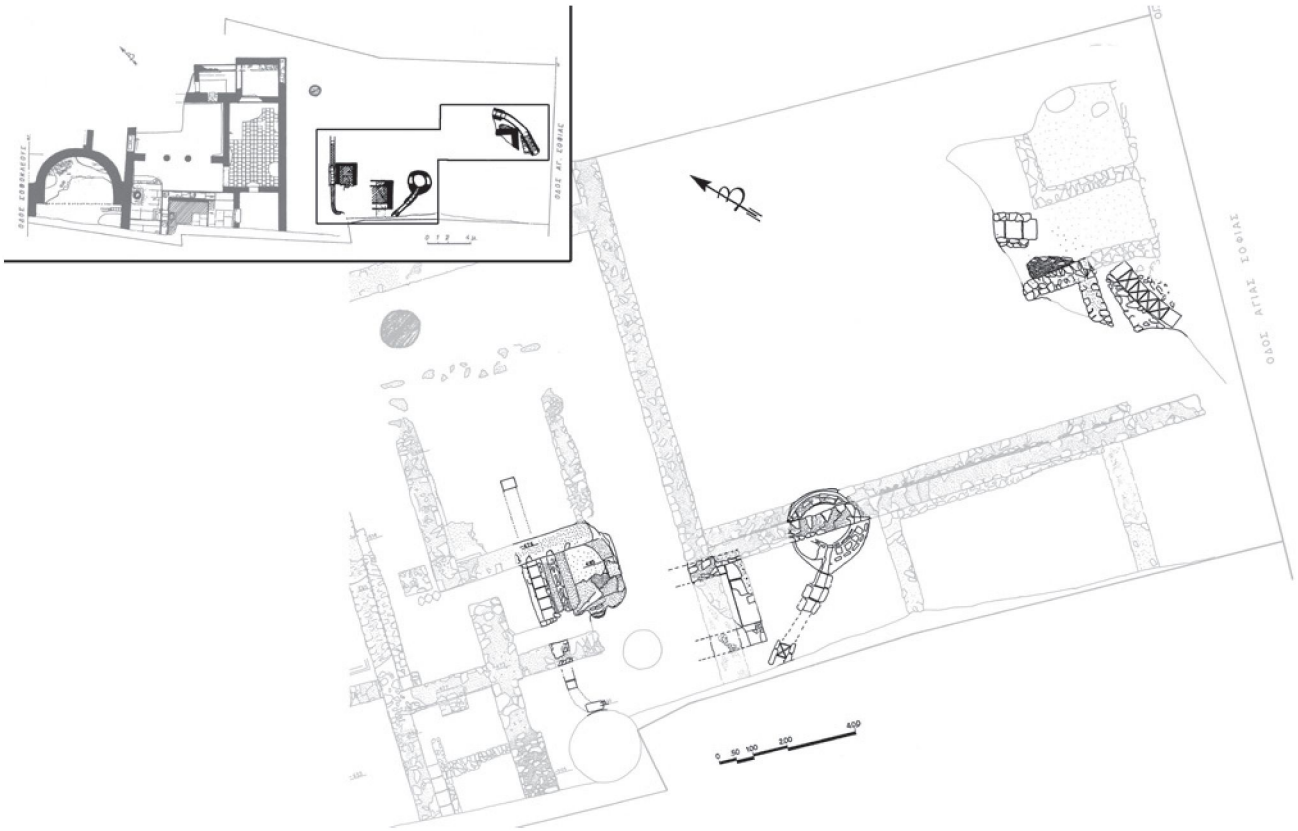


Fig. 316 75 Agias Sophias Street, plan.

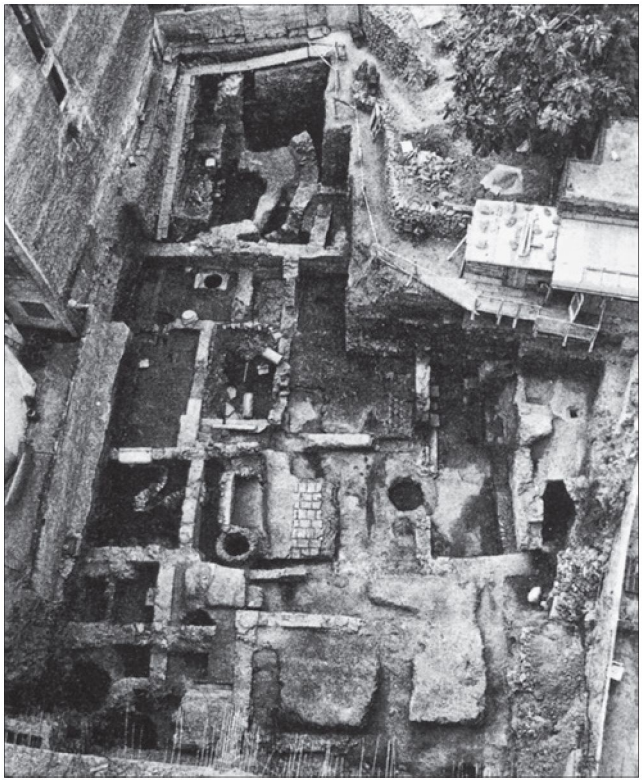


Fig. 317 75 Agias Sophias Street, general view of the excavation.



Fig. 318 75 Agias Sophias Street, view of the western house from north.

79 **figs 319-322**

Type: Dyeworks
City: Thessaloniki
Area: City centre (**map:** 8i)
Address: Ancient Agora, south street
Date: Early Christian, probably fifth century
Description: The southern side of the Ancient Agora is delimited by a stone-paved *decumanus* street with a commercial character. A row of thirteen shops has been discovered here, attached to the southern wall of the *cryptoporticus* that supports the elevated southern part of the forum. These shops were designed simultaneously with the *cryptoporticus*, but were built sometime later. Workshops operated in some of them from the middle of the fourth century onwards. Pits meeting their relevant needs were dug in their floors and finally filled in the sixth century. In the shops numbered 8, 9 and 12 (**fig. 333**), especially, reservoirs for processing were excavated that, according to the finds, operated until the end of the fifth century. These basins or reservoirs indicate most probably the operation of thread dyeworks. The shops on this southern commercial street of the forum continued to operate until the Late Byzantine period. They were cut off from the *cryptoporticus*, which was transformed into a water reservoir in the sixth century, and filled up to c. 1 m from their original floor, as was the entire southern street.
Bibliography: Bolē/Skiadaresēs, Strōmatographia stē notia pteryga 90, 94-97. – Valavanidou, Ergastēriakes chrēseis 128-129. – Vitti, Poleodomikē exelixē 185-186 no. 63 fig. XV pl. 50-51.

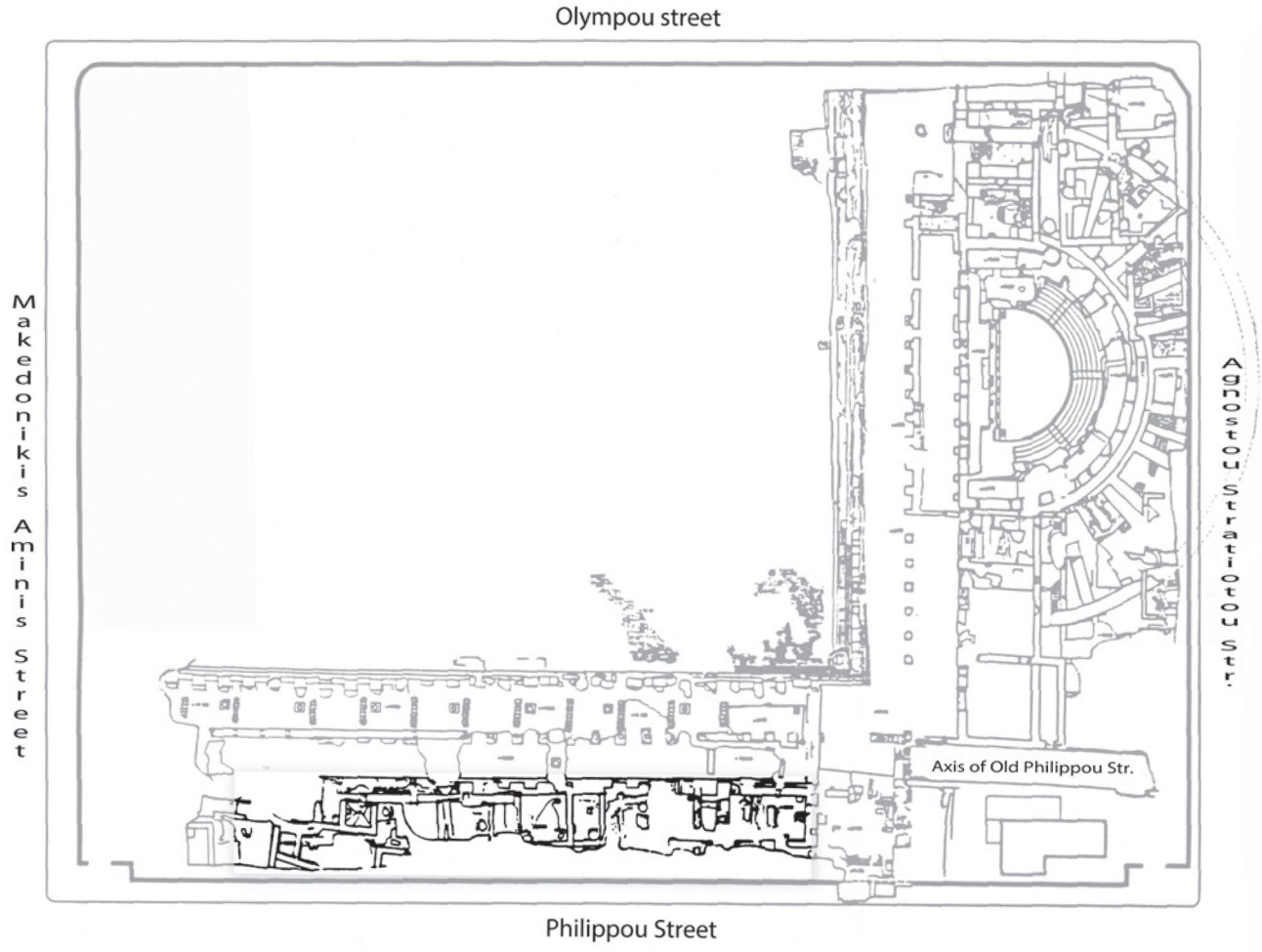


Fig. 319 Ancient Agora, plan where southern commercial street is marked in bold.

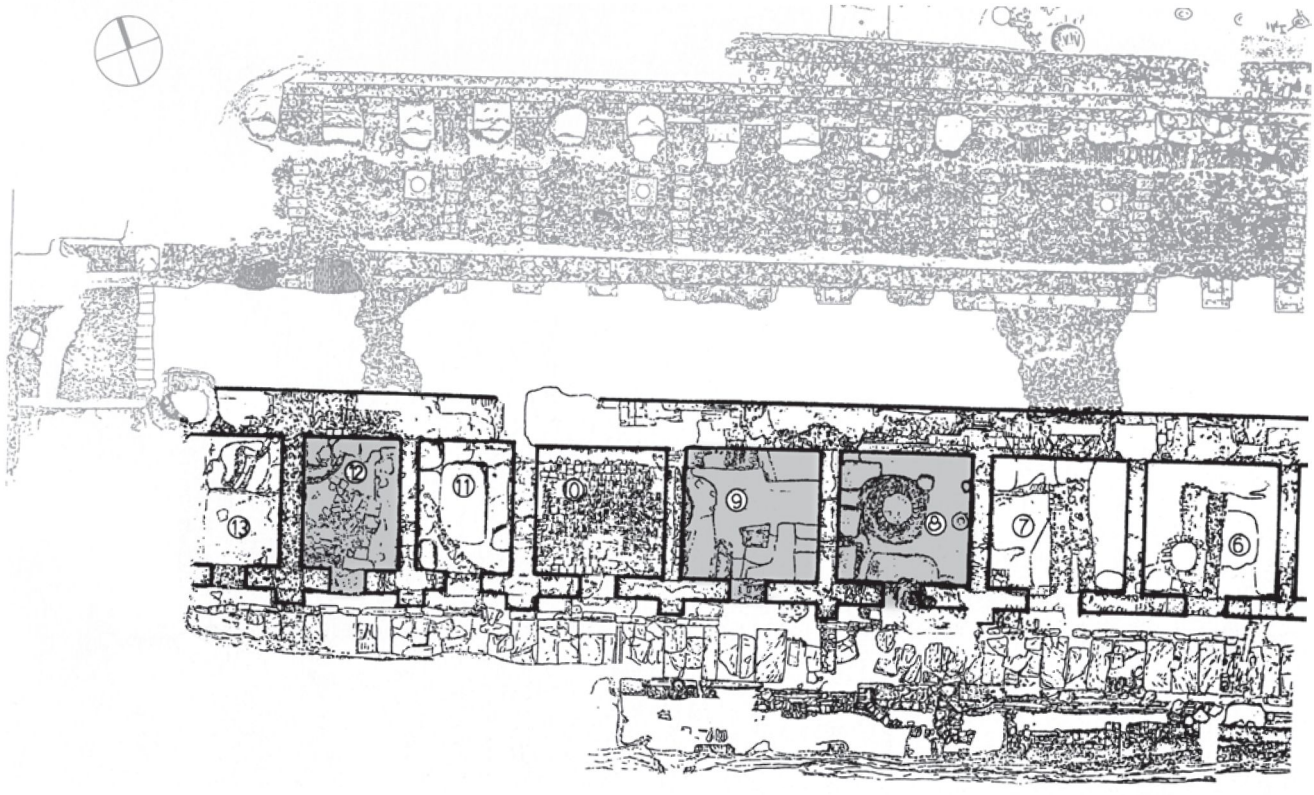


Fig. 320 Ancient Agora, plan of the workshops.



Fig. 321 Ancient Agora, general view of the southern commercial street from the west.



Fig. 322 Ancient Agora, view of shops nos 8 and 9.

80 **figs 323-326**

Type: Dyeworks
City: Thessaloniki
Area: North-east end (**map:** 7h)
Address: 7 L. Paster and Mētropolitē Iōakeim Sgourou Street
Date: Middle Byzantine period (ninth to thirteenth centuries)
Description: A Middle Byzantine workshop was discovered at the south-western corner of the plot in a salvage excavation conducted near the city wall, north-east of Dioikētēriou Square. It was built on the fill above a large fourth or fifth-century house with a central atrium that had been reconstructed and remained in use until the Dark Ages (seventh to ninth centuries). The preserved elements of the workshop comprise a pavement formed with *spolia*, a built water pipe covered with schist plaques (max. preserved length 3.4 m, 0.20 m wide, max. preserved height 0.15 m) that led to a manhole (diam. 0.60 m) and probably some older water pipes dating from the Roman phase of the site, as well as two more manholes (diam. 1.5 m and 1.6 m, respectively).
Bibliography: Cat. Thessaloniki 2002, 17.

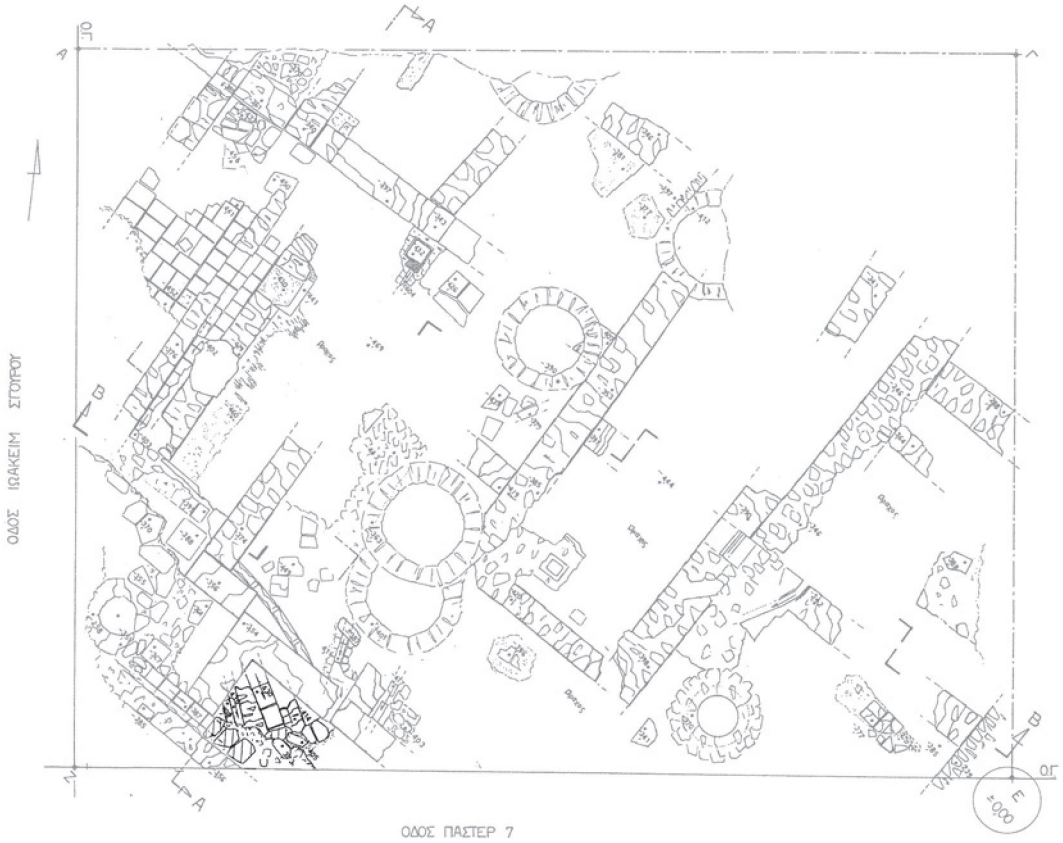


Fig. 323 7 Paster L. and Mētropolitē Iōakeim Sgourou Street, plan of the excavation.



Fig. 324 7 Paster L. and Mētropolitē Iōakeim Sgourou Street, general view of the excavation.



Fig. 325 7 Paster L. and Mētropolitē Iōakeim Sgourou Street, workshop water pipes.



Fig. 326 7 Paster L. and Mētropolitē Iōakeim Sgourou Street, workshop water pipes.

81 **fig. 327**

Type: Dyeworks
City: Thessaloniki
Area: City centre (**map:** 7k)
Address: 6 L. Iasonidou Street
Date: Late Byzantine period
Description: Luxurious fourth to sixth-century houses with opus sectile and mosaic pavements, wall mosaics and paintings were discovered during salvage excavations on this site. The houses were gradually partitioned into smaller properties during the Dark Ages, a process that continued into the Byzantine era, when a water-related artisanal use of the site can be detected (**cat. no. 97**). On the same site, in the Late Byzantine period, a thread and fabric dyeworks operated. It comprised wells and reservoirs that have been identified by the excavators as intended for dyeing.
Bibliography: Markē/Kommatas, Iasonidou 6, 333 illus. 1 fig. 12.

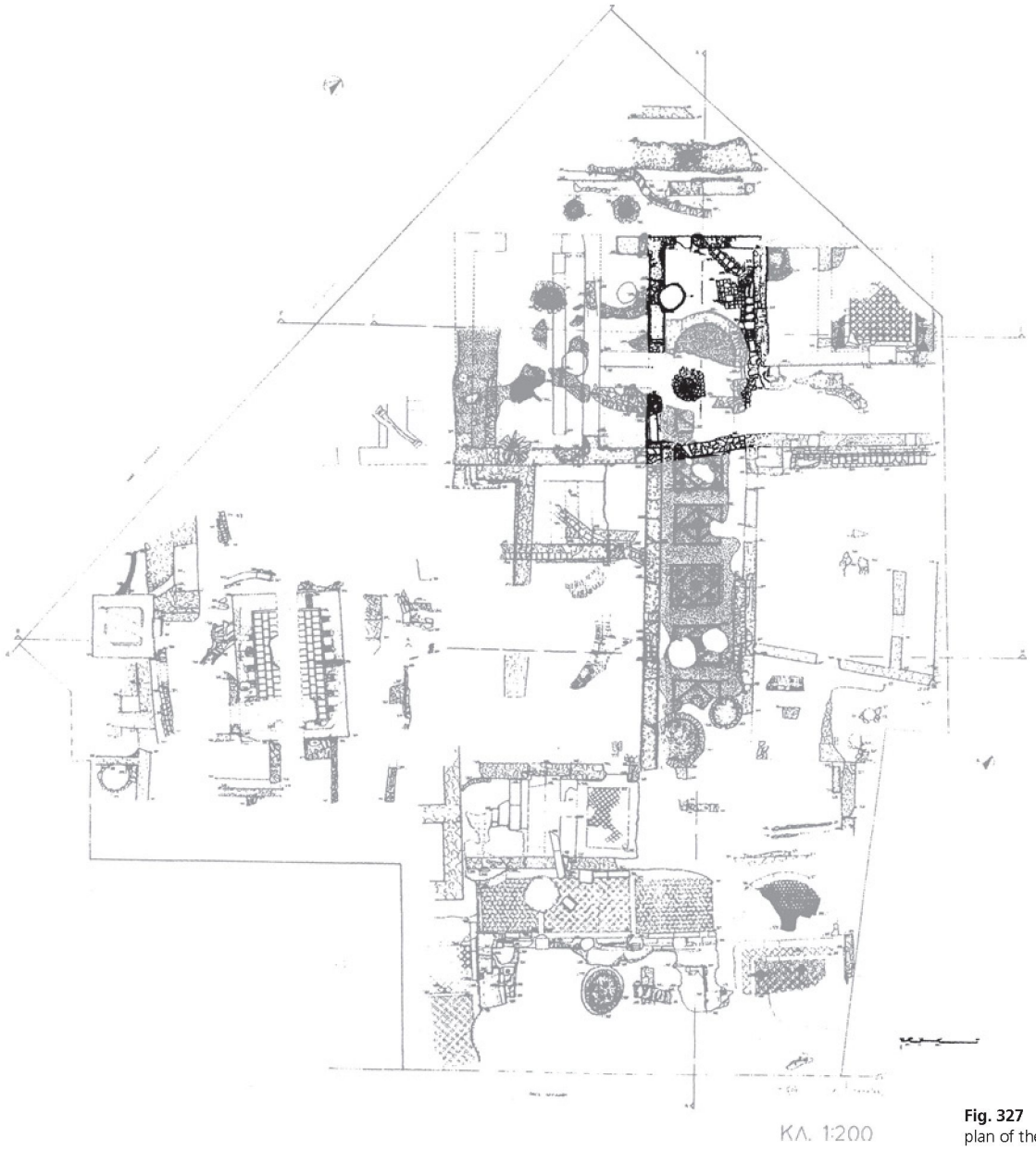


Fig. 327 6 L. Iasonidou Street, plan of the excavation.

82 **fig. 328**

Type: Dyeworks

City: Thessaloniki

Area: City centre (**map:** 8k)

Address: 6 Prasakakē and Koukouphlē Street

Date: Middle Byzantine period

Description: An Early Christian public building was discovered during salvage excavations above a Roman building with mosaic pavements, which was probably abandoned in the early fourth century. It had mosaic and opus sectile floors and had been remodeled at least three times. In the Middle Byzantine era it was partitioned into smaller rooms, one of which became a workshop with several rectangular, built water reservoirs (one of them is 3.30 m × 1.60 m) and water pipes.

Bibliography: Markē, Prasakakē – Koukouphlē 337-340 pl. 152a. – Markē, Agia Sophia kai prosktismata 58-59.

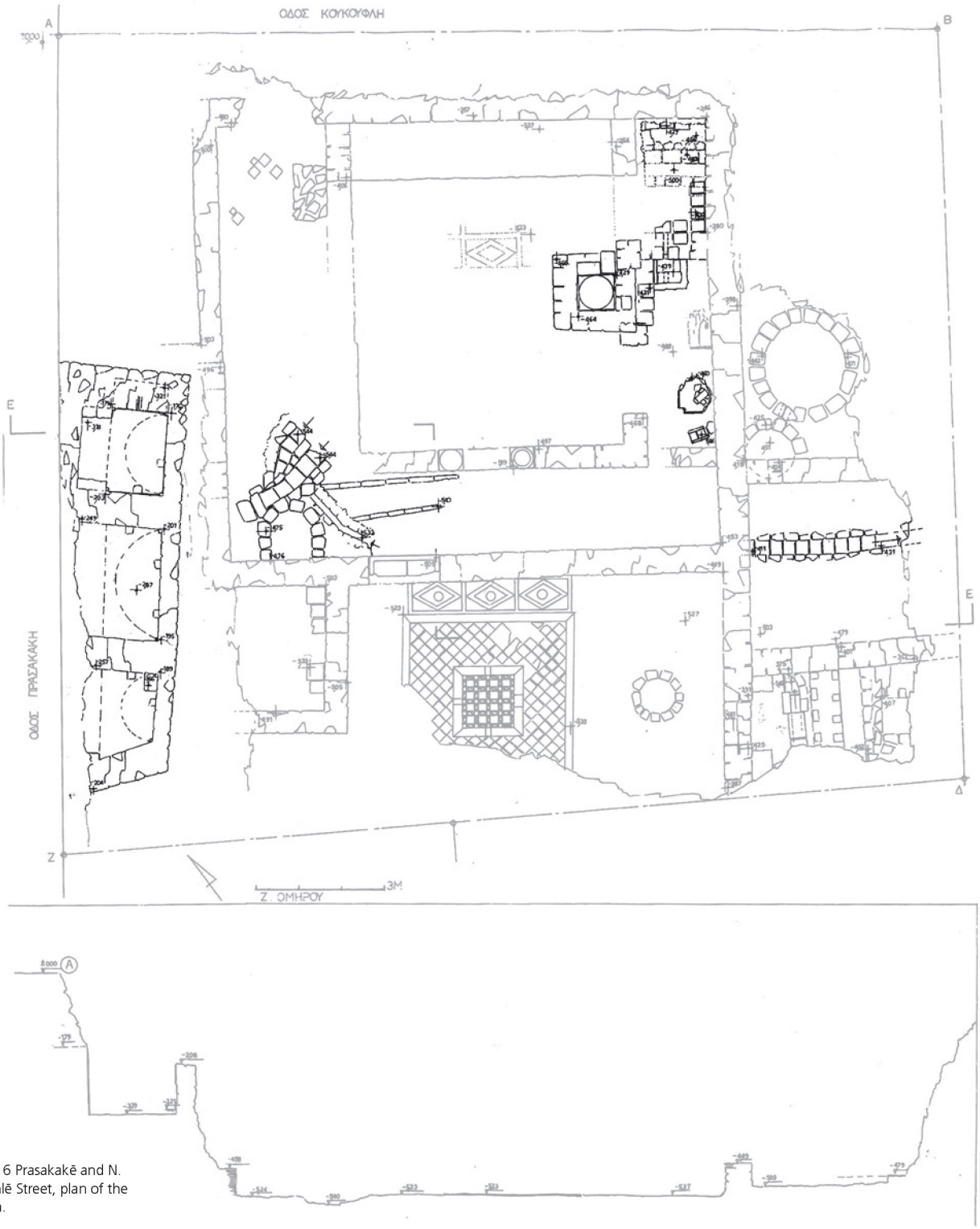


Fig. 328 6 Prasakakē and N. Koukouphlē Street, plan of the excavation.

83 **figs 329-332**

Type: Undetermined, including use of water (possibly a tannery)

City: Thessaloniki

Area: City centre (**map:** 7j)

Address: 2 Sophokleous Street

Date: Late Roman period, Tetrarchy

Description: Remains of two rooms, either shops or workshops, dating from Roman Imperial times, were discovered during salvage excavations. In the northern section, a rectangular structure was found that had a rock-hewn pipe coming from a rock-carved basin leading to it. This pipe, along with another rock-carved basin and a rectangular basin coated with lime at the southern end of the site, belonged to an open-air workshop. Remains of this workshop present a partly rock-hewn domed reservoir (2 m × 2.40 m × 1.80 m), a carved basin coated with lime at the north-eastern part of the site, and possibly part of a water pipe floored with bricks dated to the time of the Tetrarchy.

Bibliography: Cat. Thessaloniki 2003a, 12.

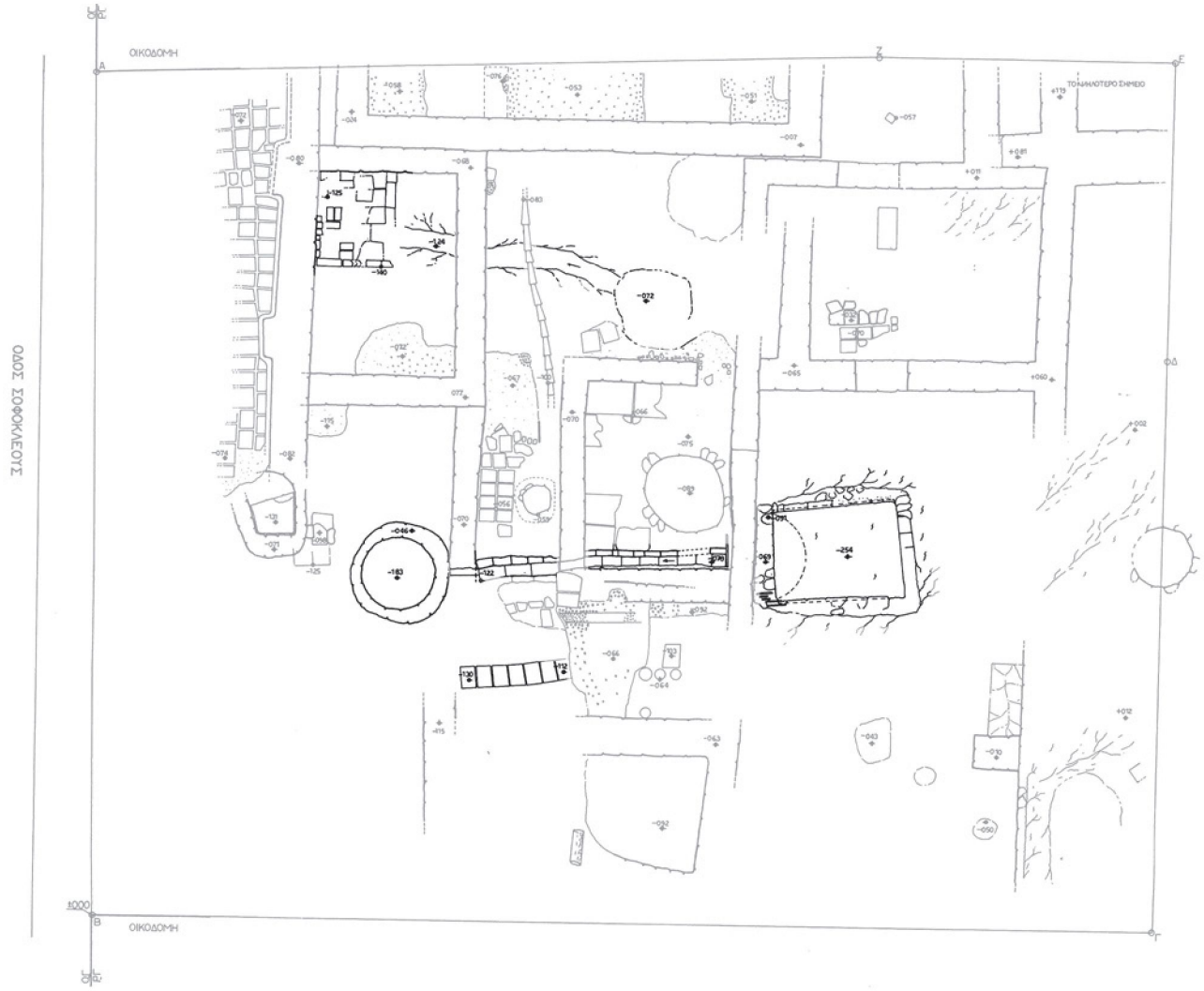


Fig. 329 2 Sophokleous Street, plan of the excavation.



Fig. 330 2 Sophokleous Street, general view of the excavation.



Fig. 331 2 Sophokleous Street, workshop of the Imperial period.

84 **figs 319, 321-322, 333-335**

Type: Tannery
City: Thessaloniki
Area: City centre (**map:** 8i)
Address: Ancient Agora, *cryptoporticus*
Date: Early Christian period
Description: In the row of thirteen shops described above (**cat. no. 79**), evidence for a tannery or tanneries was discovered. Basins or reservoirs in the first shop, combined with traces of lime, suggest that it was a tannery, although a similar picture could be produced by a thread dyeworks. However, a curved knife, designed for the cleaning of skins during their processing in tanneries, found in the tenth shop confirms the hypothesis that at least one tannery operated here. The shops of this southern commercial street of the forum continued to operate until the Late Byzantine period. They were cut off from the *cryptoporticus*, which was transformed into a water reservoir in the sixth century, and filled up to c. 1 m from its original floor, as was the entire southern street.



Fig. 332 2 Sophokleous Street, rock-cut, vaulted cistern.

Bibliography: Adam-Velenē, Archaia Agora 520 fig. 3. – Valavanidou, Ergastēriakes chrēseis 128-129. – Bolē/Skiadaresēs, Strōmatographia stē notia pteryga 90, 94-97. – Vitti, Poleodomikē exelixē 185-186 no. 63 fig. XV pl. 50-51.

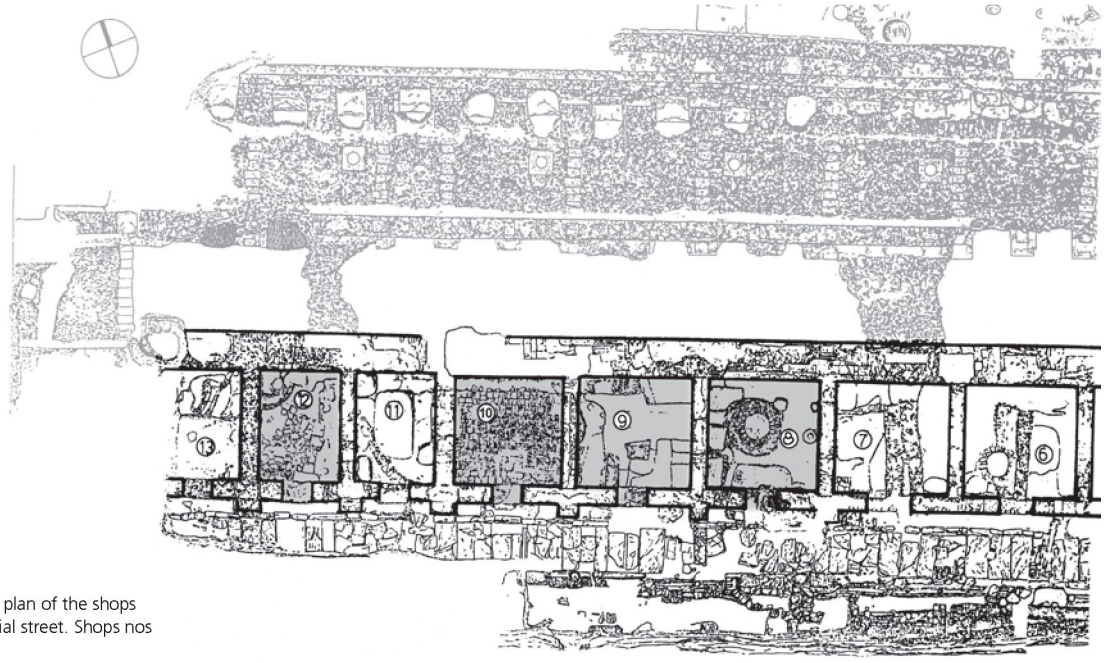


Fig. 333 Ancient Agora, plan of the shops on the southern commercial street. Shops nos 8, 9, 12 are highlighted.



Fig. 334 Ancient Agora, *cryptoporticus*. Pits, pipes and a lime-cist in the area of shop no. 13. View from the west.

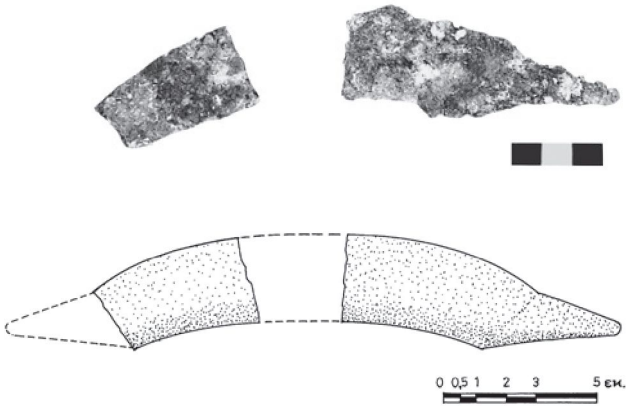


Fig. 335 Ancient Agora, curved blade of a tanner's knife found in shop no. 9.

85 **figs 336-338**

Type: Tannery
City: Thessaloniki
Area: City centre (**map:** 6I)
Address: 18 K. Melenikou Street
Date: Sixth to seventh centuries
Description: A sixth to seventh-century installation was unearthed on the site of the eastern Roman cemetery. The following elements of the workshop were found: at the west part of the plot a mud-built wall (max. preserved length 8.80 m, width 0.60 m); two lime pits (3.10 m × 1.75 m and 3.14 m × 1.82 m, respectively, 0.30 m deep); a carefully constructed circular shaft (1.27 m deep); and a floor made of lime mortar (5 m × 3.13 m) at the eastern part of the excavation. The installation has been identified as a tannery due to the presence of lime pits.
Bibliography: Cat. Thessaloniki 2005, 6.

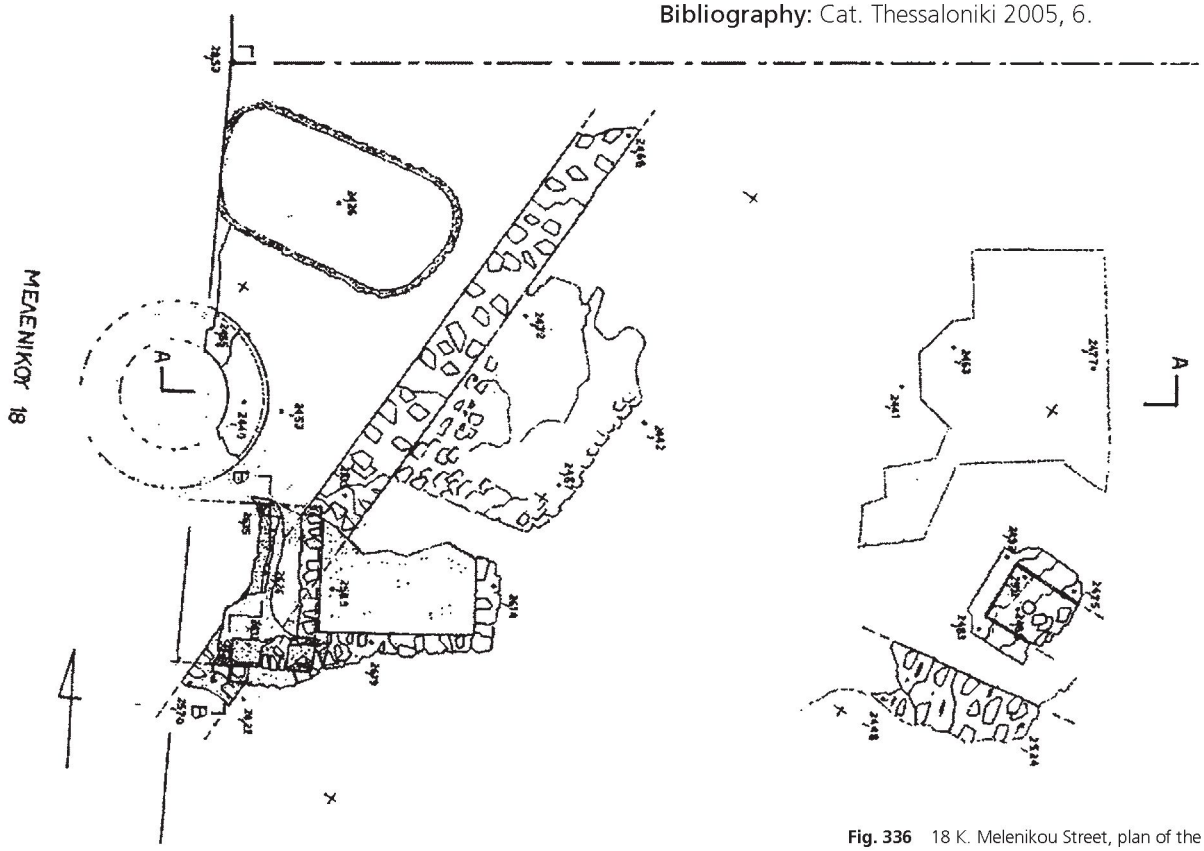


Fig. 336 18 K. Melenikou Street, plan of the excavation.



Fig. 338 18 K. Melenikou Street, view of the workshop's installation.



Fig. 337 18 K. Melenikou Street, general view of the excavation.

86 fig. 339

Type: Undetermined, including use of water (possibly a tannery)

City: Thessaloniki

Area: City centre (**map:** 8j)

Address: 52 Agias Sophias Street

Date: Eighth to ninth centuries

Description: Remains of a workshop were found above the ruins of a fifth-century bath house, probably connected with the complex of Acheiropoiētos. The bath was abandoned either in the Dark Ages (seventh to ninth centuries), or the early Middle Byzantine period. Its floors were elevated and the space was transformed into a workshop. A pipe was constructed (orientated east-west) with water flowing westwards above the bath's fire-tunnel (*praefurnium*). Another pipe was found north-west of the site. A new structure and a square reservoir are dated to the same phase. Later in the same phase, the workshop underwent some modifications: a lime-coated reservoir was constructed to the west of the existing one, and a shaft was built, with two of its stone-and-brick walls preserved.

Bibliography: Markē, Agias Sophias 52, 511-515.

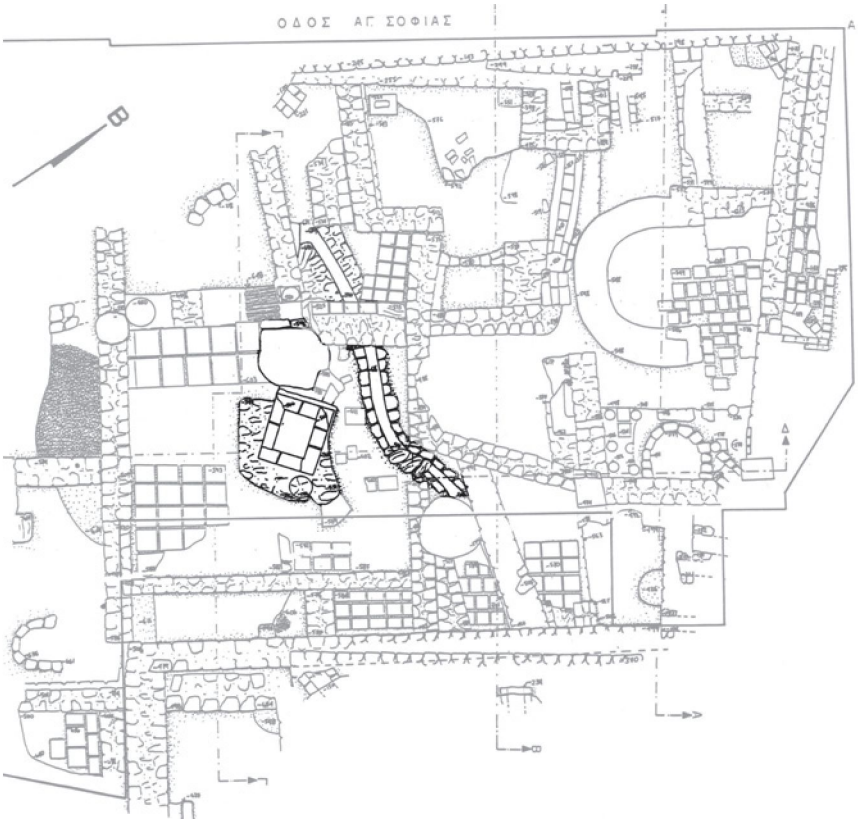


Fig. 339 52 Agias Sophias Street, plan of the excavation.

87 **figs 340-341**

Type: Tannery
City: Thessaloniki
Area: West end (**map:** 9f)
Address: 12 Zephyrōn Street
Date: Thirteenth to fifteenth centuries
Description: A Palaeologan workshop, identified as a tannery from archaeological finds, has been excavated, that was situated within and very close to the western city walls. It was built during the Late Byzantine period on the site of an Early Christian and Middle Byzantine house. The finds comprise two small, rectangular reservoirs (1 m × 1.7 m and 0.55 m × 0.60 m, respectively), built with stones and lime mortar enriched with powdered brick, and a lime pit. Several pipes that were found all over the site are dated to the same phase. These are stone-built and floored with brick, having a square cross-section. The artisanal use of the site continued into the Ottoman period. Finds from this period comprise several water pipes, a shaft or manhole, a kiln, a pit and the covering of a shaft.
Bibliography: Cat. Thessaloniki 2006, 7.

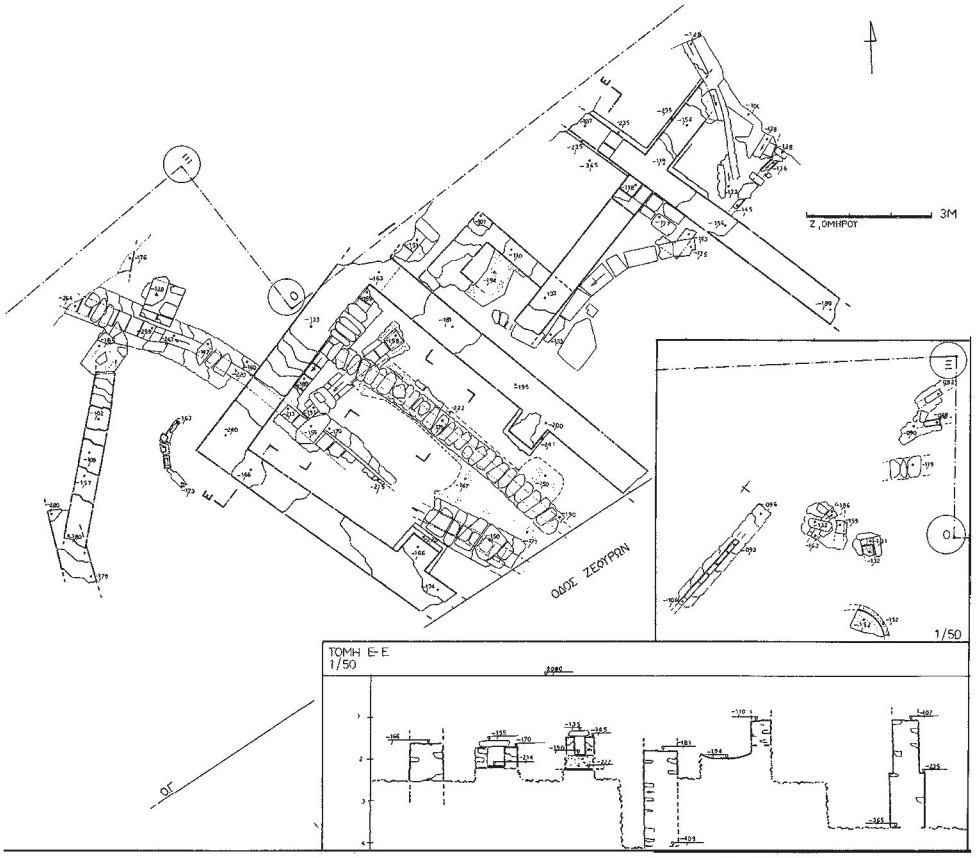


Fig. 340 12 Zephyrōn Street, plan of the excavation.



Fig. 341 12 Zephyrōn Street, general view of the excavation.

88 **figs 310. 342**

Type: Workshop of undetermined use with evidence of water usage (no kiln)

City: Thessaloniki

Area: East end (**map:** 5I)

Address: Kastrōn Street

Date: Possibly Early Christian period, possibly be much later

Description: A workshop was discovered during salvage excavations on Kastrōn Street (north of the Olympiados to Achilleōs Street). It was located in the southern tower of two square defensive towers of the eastern city walls. A 200-metre-long section of the wall was also excavated. Dating from a later period than the tower itself, remains included two twin water pipes made from bricks and covered with schist stones and marble slabs (max. preserved length 6.5 m and 7.15 m, 0.55 m wide), designed to carry water in a west to east direction. Fragments of an amphora and a mid-fourth-century bronze coin of Constans (337-350) or Constantius I (305-306) were found in the tower's infill.

Bibliography: Cat. Thessaloniki 2003a, 5.

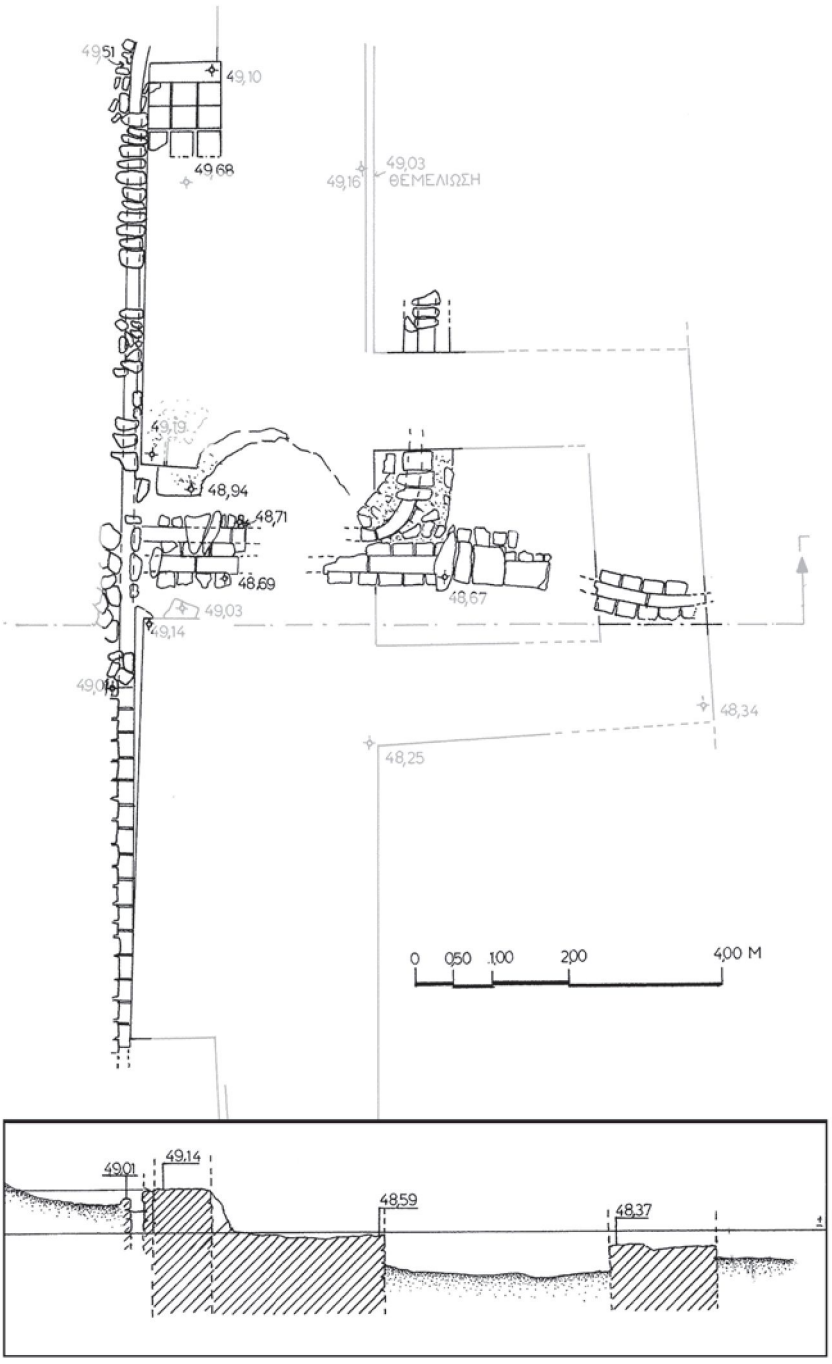


Fig. 342 Kastrōn Street, plan and section of the excavation.

89 figs 343-345

Type: Workshop of undetermined use with evidence of water usage (no kiln)

City: Thessaloniki

Area: City centre (**map:** 9f)

Address: Pheidiou and 12 Zephyrōn Street

Date: Late Roman period

Description: Parts of a Late Roman workshop were discovered during excavations conducted in this plot. Finds included five water pipes, two of them orientated east-west. They were plastered with hydraulic mortar and floored with clay bricks.

Bibliography: Single note in: Karamperē, Gladstōnos 9, 522. – Unpublished photographic material and excavation diaries, Archive of the 16th Ephorate of Prehistoric and Classical Antiquities.

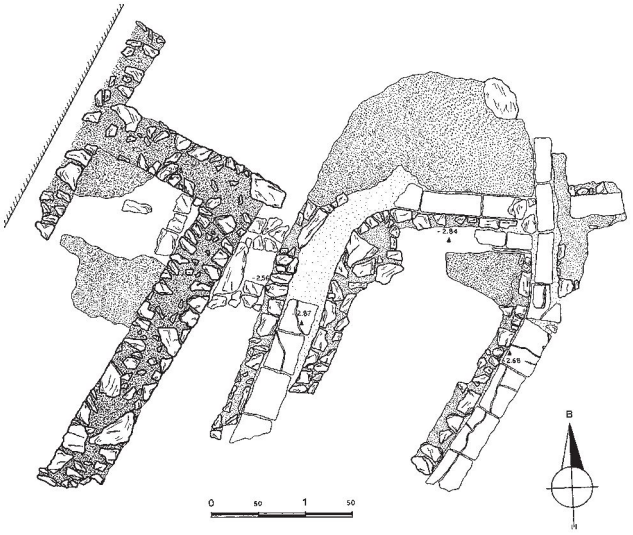


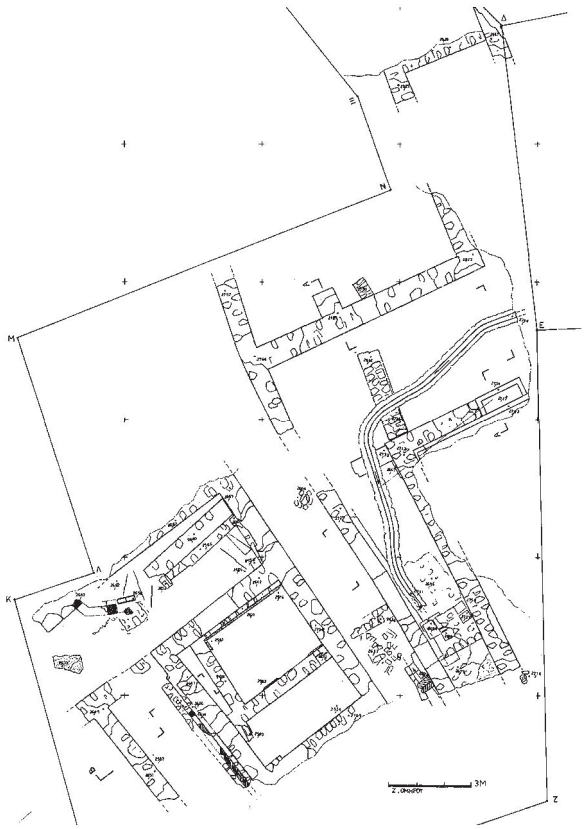
Fig. 343 12 Zephyrōn and Feidiou Street, plan of the excavation.



Fig. 344 12 Zephyrōn and Feidiou Street, general view of the excavation.



Fig. 345 12 Zephyrōn and Feidiou Street, general view of the excavation.



90 figs 346-349

Type: Workshop of undetermined use, possibly water-dependant (no kiln)

City: Thessaloniki

Area: West end (**map:** 8f)

Address: 4A Eratous Street

Date: Early Christian

Description: An Early Christian artisanal complex was found on the site of an early Roman cemetery near the western city walls. Two phases of construction can be identified. The remains of the original building comprise two strong walls (0.50 m thick) made with stones and lime mortar. It was later enlarged with the addition of a larger room (internal dim. 5 m × 4.5 m), a long corridor (3 m × 7.5 m) and another room at the southern end of the site. This new building was constructed with thick walls (0.70 m to 0.80 m wide) made of schist stones and lime mortar, containing powdered brick. It was covered with roof tiles and also included a drainage or sewage pipe.

Bibliography: Cat. Thessaloniki 2006, 6.

Fig. 346 4A Eratous Street, plan of the excavation.



Fig. 347 4A Eratous Street, general view of the excavation.



Fig. 348 4A Eratous Street, water pipe of the workshop.

91 figs 350-352

Type: Workshop of undetermined use with evidence of water usage (no kiln)

City: Thessaloniki

Area: East end (**map:** 7I)

Address: 28 Patriarchou Iōakeim Street and Agiou Geōrgiou Square

Date: Fourth century

Description: Late Roman remains comprising two rooms with several structural phases were found at the junction of 28 Patriarchou Iōakeim Street and Agiou Geōrgiou Square. One of the rooms was paved with hydraulic mortar, part of which was destroyed during the later construction of a workshop. Remains of a built pithos were also attributed to the workshop.

Bibliography: Alexandrē, Patriarchou Iōakeim 28, 670 illus. 11 pl. 484 α-γ. – Vitti, Poleodomikē exelixē 221-224 no. 105 fig. XXXIV.



Fig. 349 4A Eratous Street, entrance of the workshop.

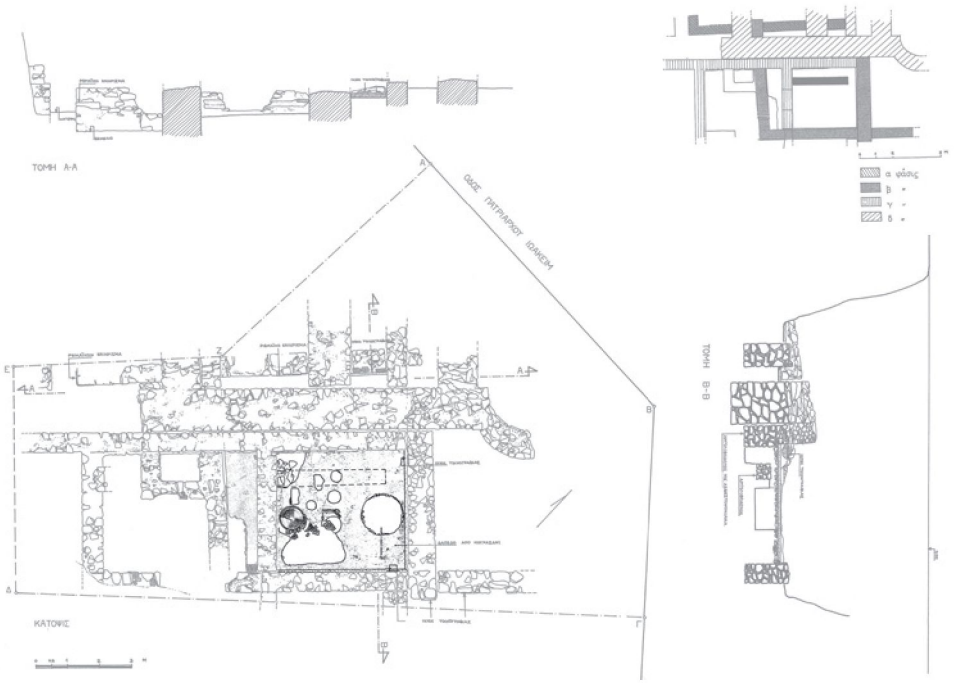


Fig. 350 28 Patriarchou Iōakeim Street & Agiou Geōrgiou Square, plan of the excavation.



Fig. 351 28 Patriarchou Iōakeim Street and Agiou Geōrgiou Square, general view of the excavation.



Fig. 352 28 Patriarchou Iōakeim Street and Agiou Geōrgiou Square, general view of the excavation.

92 **figs 346-349**

Type: Workshop of undetermined use with evidence of water usage (no kiln)

City: Thessaloniki

Area: West end (**map:** 8f)

Address: 4A Eratous Street

Date: Early Byzantine

Description: An Early Byzantine workshop with several rooms that are not entirely preserved was found to the north-east of an Early Christian workshop on the site of an early Roman cemetery near the western city walls. Between these two workshops was a narrow, two-metre-wide street. This new workshop was built with simple walls (0.70 m thick), constructed with stones and mud, and was intersected by a built water pipe (1.8 m preserved; 0.6 m wide).

Bibliography: Cat. Thessaloniki 2006, 6.

93 **figs 353-355**

Type: Workshop of undetermined use with evidence of water usage (no kiln)

City: Thessaloniki

Area: Upper city (**map:** 6i)



Fig. 354 7 Glaukou Street, general view of the excavation.

Address: 7 Glaukou Street

Period: Probably Middle Byzantine period

Description: Remains of a workshop were found above the ruins of an Early Christian building, which had probably been of public character. Part of the workshop's structure and a built rectangular water pipe, covered with two Early Christian marble columns, were found. The site was used as a cemetery in the Late Byzantine period.

Bibliography: Cat. Thessaloniki 2001, 12.



Fig. 355 7 Glaukou Street, water pipe.

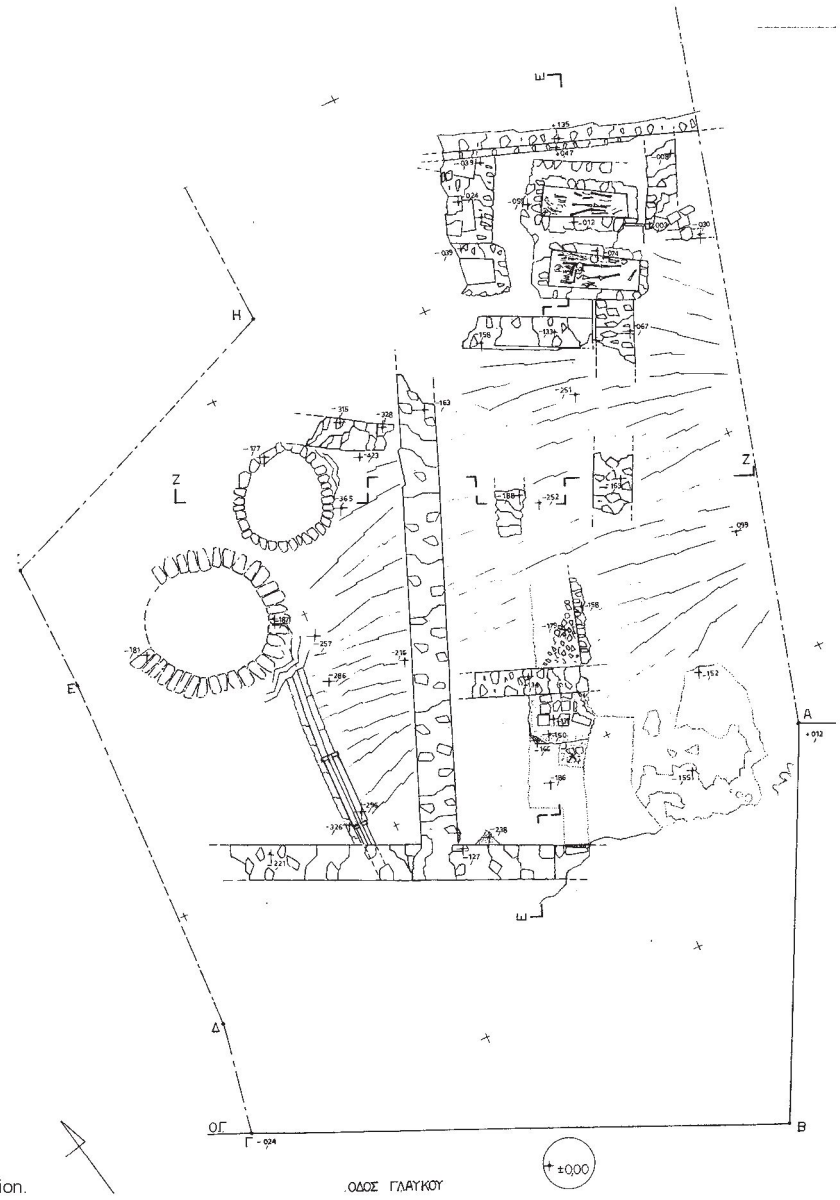


Fig. 353 7 Glaukou Street, plan of the excavation.

94

Type: Workshop of undetermined use with evidence of water usage (no kiln)
City: Thessaloniki
Area: Upper city (**map:** 5j)
Address: 10-12 Aiolou Street
Date: Byzantine period
Description: An unidentified workshop was found during salvage excavations in an area where a Middle Byzantine reconstruction phase was detected above the ruins of a large *villa urbana* built in the second quarter of the fifth century. Structural elements connected with the workshop comprise two basins (one to the west, 1.20 m × 0.30 m; and one to the east, 0.70 m × 0.30 m; both of them 0.15 m high) made of hydraulic mortar that cover the original pavement of the area. In addition, the fact that the western face of the western wall of the structure is covered with hydraulic mortar also indicates the same type of use of that area.
Bibliography: Markē, Sōstikes anaskaphes 205-218 esp. 215.

95 **fig. 356**

Type: Workshop of undetermined use with evidence of water usage (no kiln)
City: Thessaloniki
Area: Upper city (**map:** 5j)
Address: Kōnstantakopoulou and 6 Thēseōs Street
Date: Middle Byzantine or early Late Byzantine period
Description: An Early Christian house was re-used as a monastery from the seventh century onwards and fell into ruins by the early Late Byzantine period. The monastery was subsequently rebuilt and part of the area was used as a cemetery. During this period, a room was constructed (at the south-western section of the plot) with a clay or mud floor

for some kind of artisanal activity, judging from the remains of water pipes, a well, and the bases of built work benches which were unearthed in it.

Bibliography: Karydas, Kōnstantakopoulou kai Thēseōs 6, 613-615. – Karydas, Vyzantinē monē stēn odo Thēseōs 152-163.

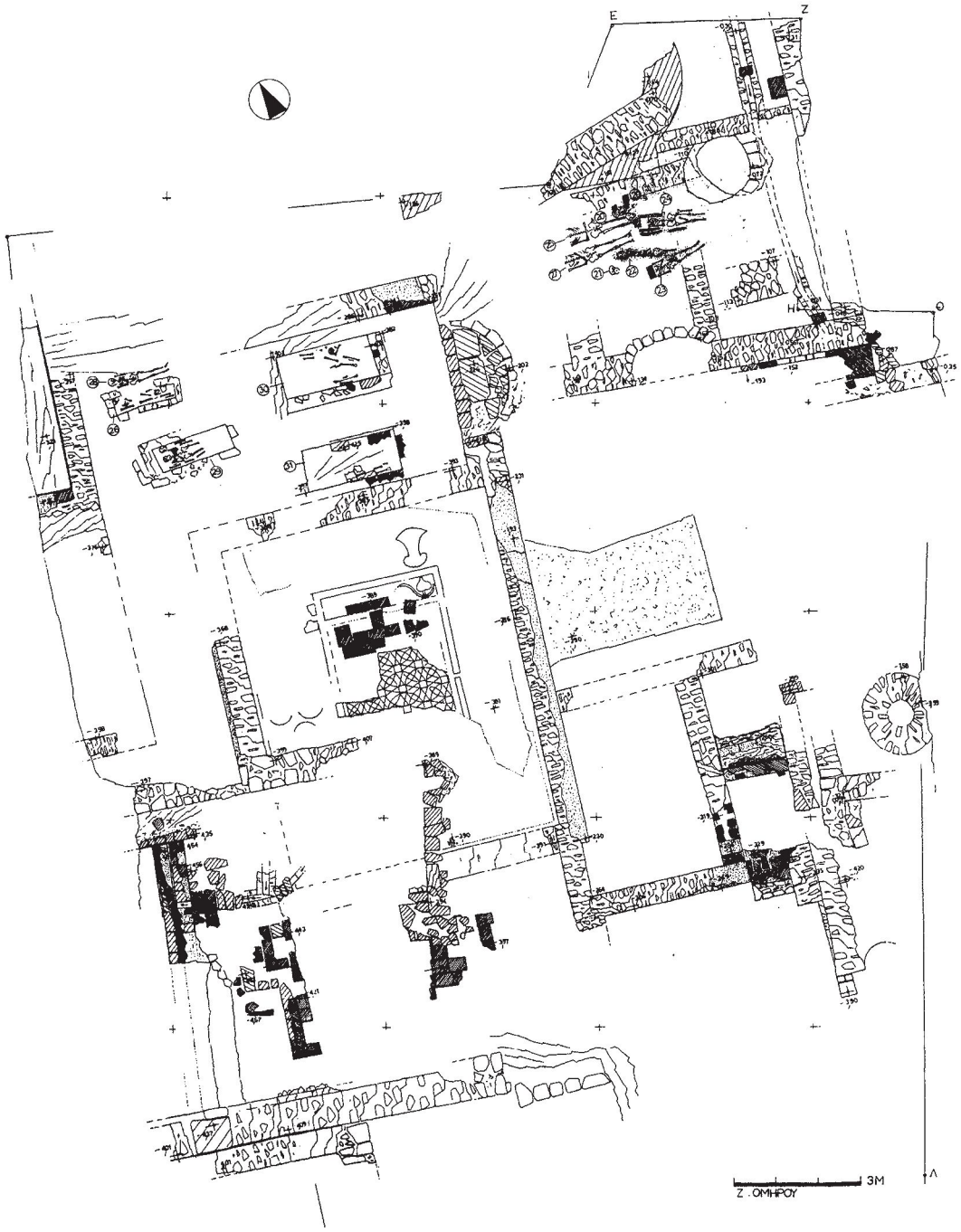


Fig. 356 Kōnstantakopoulou and 6 Thēseōs Street, plan of the excavation.

96 **fig. 357**

Type: Workshop of undetermined use with evidence of water usage (no kiln)

City: Thessaloniki

Area: City centre (**map:** 7I)

Address: 2 L. Iasonidou Street

Date: Byzantine period, probably tenth to fifteenth centuries

Description: Remains of what was probably a Byzantine workshop were discovered during salvage excavations above a layer containing a fourth-century metal workshop (**cat. no. 46**), two luxurious fifth to sixth-century buildings (one private and one public), and a modest house of the Dark Ages (seventh to ninth centuries). The workshop was connected to a network of contemporarily built water pipes and a rectangular reservoir (1.90 m × 1.50 m). Two wells, a circular one (diam. 1 m) and a rectangular one (0.92 m × 0.77 m), may also belong to the same system.

Bibliography: Markē, Iasonidou 2, 515-517 illus. 28.

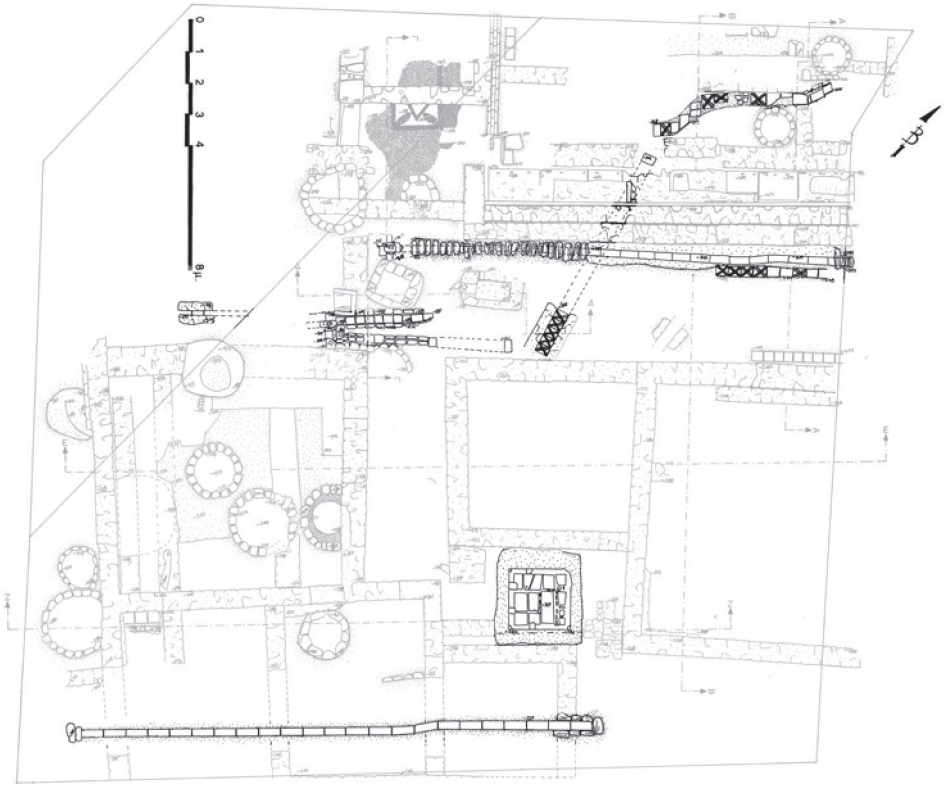
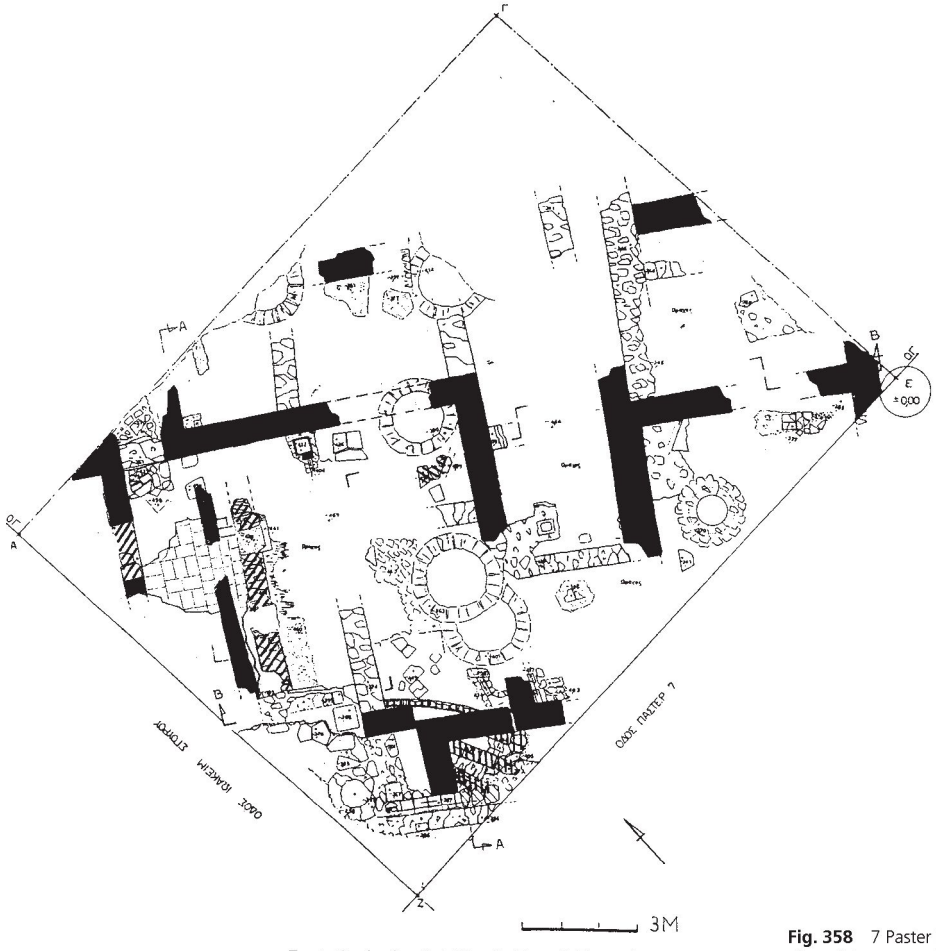


Fig. 357 2 L. Iasonidou Street, plan of the excavation.

97 **fig. 327**
Type: Workshop of undetermined use with evidence of water usage (no kiln)
City: Thessaloniki
Area: City centre (**map:** 7k)
Address: 6 L. Iasonidou Street
Date: Byzantine period, probably tenth to fifteenth centuries
Description: Luxurious fourth to sixth-century houses with opus sectile and mosaic pavements, wall mosaics and paintings were discovered during salvage excavations. The houses had been partitioned into smaller properties during the Dark Ages, a procedure that continued in the Byzantine era, when an artisanal use of the site can be determined. The central room of the western house was divided into two parts and a workshop operated in each part. In the northern part (5.60 m × 2.60 m), a built well (diameter 1 m) was found; and in the southern part (5.60 m × 4.80 m), a built water pipe was excavated, running parallelly to the north wall. A thread and fabric dyeworks (**cat. no. 81**) with built wells and reservoirs that have been identified by the excavators as intended for dyeing operated on the same site in the Late Byzantine period.
Bibliography: Markē/Kommatas, Iasonidou 6, 333 illus. 1 fig. 12.

98 **fig. 136**
Type: Workshop of undetermined use with evidence of water usage (no kiln)
City: Thessaloniki
Area: City centre (**map:** 9h)
Address: Egnatia Street, Venizelou Metro Station excavations
Date: Late Byzantine period
Description: Parts of a Late Byzantine building comprising two rooms were excavated in the eastern part of the dig. The eastern room (max. visible dimensions 4.85 m × 3.65 m) was built in a pseudo-*plinthoperikleisto* style, i. e. with imperfect *cloisonné* masonry. The northerin part of this room was partitioned by thinner walls into smaller rooms that were then used as workshops. This is indicated by the built well which was found in the western room.
Bibliography: Markē/Vasileiadou, Metro 2008, 301-302.

99 **fig. 358**
Type: Workshop of undetermined use with evidence of water usage (no kiln)
City: Thessaloniki
Area: City centre (**map:** 7h)
Address: 7 L. Paster and Mētropolitē Iōakeim Sgourou Street
Date: Late Byzantine period
Description: Salvage excavations revealed an Early Christian house with a central courtyard built over a Roman house. In the Middle Byzantine period it was subdivided, and by the Late Byzantine period a workshop was operating in the southern part of the plot. Water pipes and a well from this workshop have been found.
Bibliography: Karydas, Anaskaphes Paster 311-312 illus. 4 fig. 3.



Σχ. 4. Οικόπεδο οδού Παστέρ 7 και Ι. Σγουρού.

Fig. 358 7 Paster L. and Mētropolitē Iōakeim Sgourou Street, plan of the excavation.

100 **figs 337, 359**

Type: Workshop of undetermined use with evidence of water usage (no kiln)

City: Thessaloniki

Area: City centre (**map:** 6I)

Address: 18 K. Melenikou Street

Date: Modern period

Description: A sixth or seventh-century installation identified as a tannery was discovered on the site of the eastern Roman cemetery (**cat. no. 85**). On the same plot, a modern workshop was also found. It comprises remains of a reservoir coated with hydraulic mortar (2.45 m × 1.40 m) and a rectangular structure (2.14 m × 1.55 m) of unknown use.

Bibliography: Cat. Thessaloniki 2005, 6.

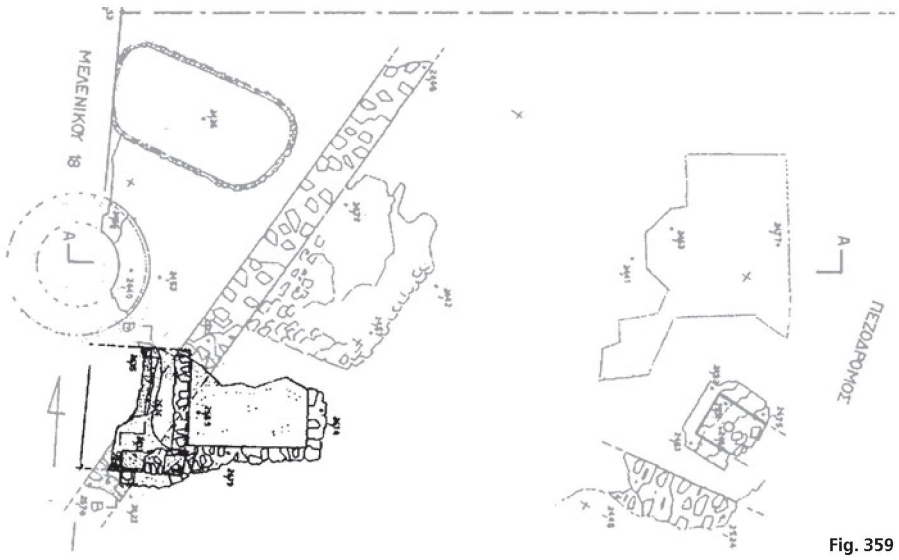


Fig. 359 18 K. Melenikou Street, plan of the excavation.

101 figs 360-361
Type: Bonecarving workshop
City: Thessaloniki
Area: City centre (**map:** 7i)
Address: Ancient Agora
Date: Prior to the fourth century, probably first century AD
Description: A large number of partly processed bones and several bone tools, mainly pins and handles, was discovered in a room at the north-western end of the eastern wing of the Agora. These objects were found in the fill that was used for levelling during the mid-fourth century transformation of the Odeion into an open theatre. Finds of bones and antlers in different stages of processing were also found in pits in the open square of the Ancient Agora, indicating the presence of a bone carving workshop on the site. Among the products of the Agora's bone workshop were tools, jewellery, decorative furniture-fittings, clothing accessories, bases, figurines, handles for knives and swords, musical instruments, needles, writing utensils, dice, knucklebones and game counters.



Fig. 360 Ancient Agora, unfinished bone tools.

Bibliography: Valavanidou, Ergastēriakes chrēseis 127 fig. 3. – Personal observation (16 August 2012) of the exhibits in the Museum of the Ancient Agora, filling an entire showcase and many more in the storage rooms.



Fig. 361 Ancient Agora, unfinished and finished bone tools.

102 **fig. 362**
Type: Bonecarving workshop
City: Thessaloniki
Area: Upper city (**map:** 5i)
Address: Antiochou, parodos
Date: Early Christian
Description: Parts of a very large *villa urbana* were uncovered in the north-eastern part of the city during the salvage excavation conducted on the plot in 1997. Parts of the same residential complex had been revealed in a number of neighbouring plots in earlier excavations. Its construction was dated to the late fourth century and its destruction before the early sixth century. The site was later abondoned and used as cemetery. In this particular plot, a section of the villa's courtyard was unearthed that was used as a refuse pit by its inhabitants. Among other movable finds, the excavator noted a great quantity of clay sherds, clay lamps and figurines, glass vessel fragments, marble mortars, a bronze pin and six bronze buttons. In addition, fifteen bone pins (intact and in fragments), six bone needles and two bone spoons were unearthed. Some of the bone pins and spoons (*spatulae*) were found in different stages of preparation indicating that bone carving was carried out in the area.
Bibliography: Makropoulou, Antiochou 8-10, 695, with all earlier bibliography on this *villa urbana*, e.g. Makropoulou, Palaiochristianikē oikia 257-270.



Fig. 362 Antiochou, parodos, unfinished and finished bone tools.

103 **figs 363-365**

Type: Bonecarving
City: Thessaloniki
Area: Upper city (**map:** 6h)
Address: Olympiados and Sakellariou Street
Date: Possibly Roman or Early Christian
Description: Architectural remains of two phases were unearthed in a salvage excavation on a plot severly damaged by mechanical removal of the soil. The true nature of the buildings could not established. The earlier phase was dated to the Late Roman period. No mention of bone finds can be found in the report, yet fifty-seven bone impliments have been unearthed in the excavation. These are mostly pins, needles, one small cosmetic spoon and one broken spoon. Among the bone finds at least four of the pins, all of them with globular head, and nine shafts of needles (with ovular cross-section) and pins (with circular cross-section) are unfinished, indicating that they were made on-site or in a nearby workshop.

Bibliography: Eleutheriadou, Olympiados kai Sakellariou 387-391, where the only available information about the excavation is published.

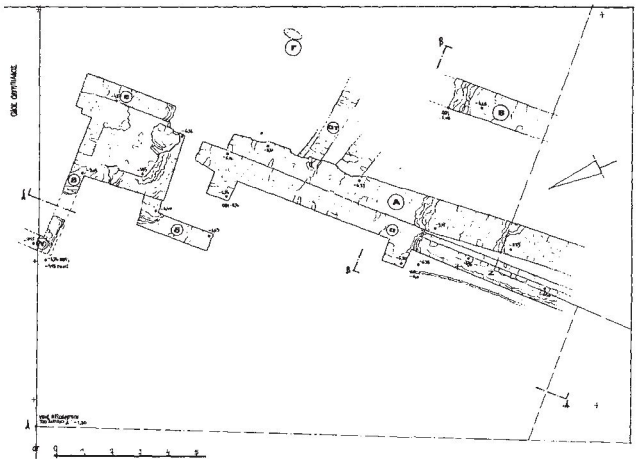


Fig. 363 Olympiados and Sakellariou Street, plan of the excavation.



Fig. 364 Olympiados and Sakellariou Street, bone tools.



Fig. 365 Olympiados and Sakellariou Street, unfinished bone tools.

Weaving Workshop

104
Type: Weaving workshop (?)
City: Thessaloniki
Area: Western Necropolis (**map:** 10f)
Address: Dēmokratias Square
Date: Sixth century
Description: A sixth-century workshop that had been destroyed in the late sixth century, was discovered during the Dēmokratias Square Metro Station excavation. Many loom weights were found here, probably indicating the workshop's nature. At the same site two more unidentifiable workshops were also found.
Bibliography: Paisidou/Vasiliadou/Kōnstantinidou, METRO 2010, 223-234.

Marble Workshops

105 fig. 366
Type: Marble workshop
City: Thessaloniki
Area: Western Necropolis (**map:** 10c)
Address: 20 Margaropoulou Street
Date: Early Christian period
Description: An extended Roman and Early Christian cemetery (third to sixth centuries) and the eastern part of a fifth-century cemeterial basilica were discovered during salvage excavations at 20 Margaropoulou Street. One of the graves found on the site (grave no. 538) was floored with a considerable quantity of marble dust, indicating, according to the excavator, the sole evidence for the location of a marble workshop in Thessaloniki.
Bibliography: Makropoulou, Margaropoulou 20, 527-530. – Makropoulou, Taphoi kai taphes 225, 373 nt. 241.

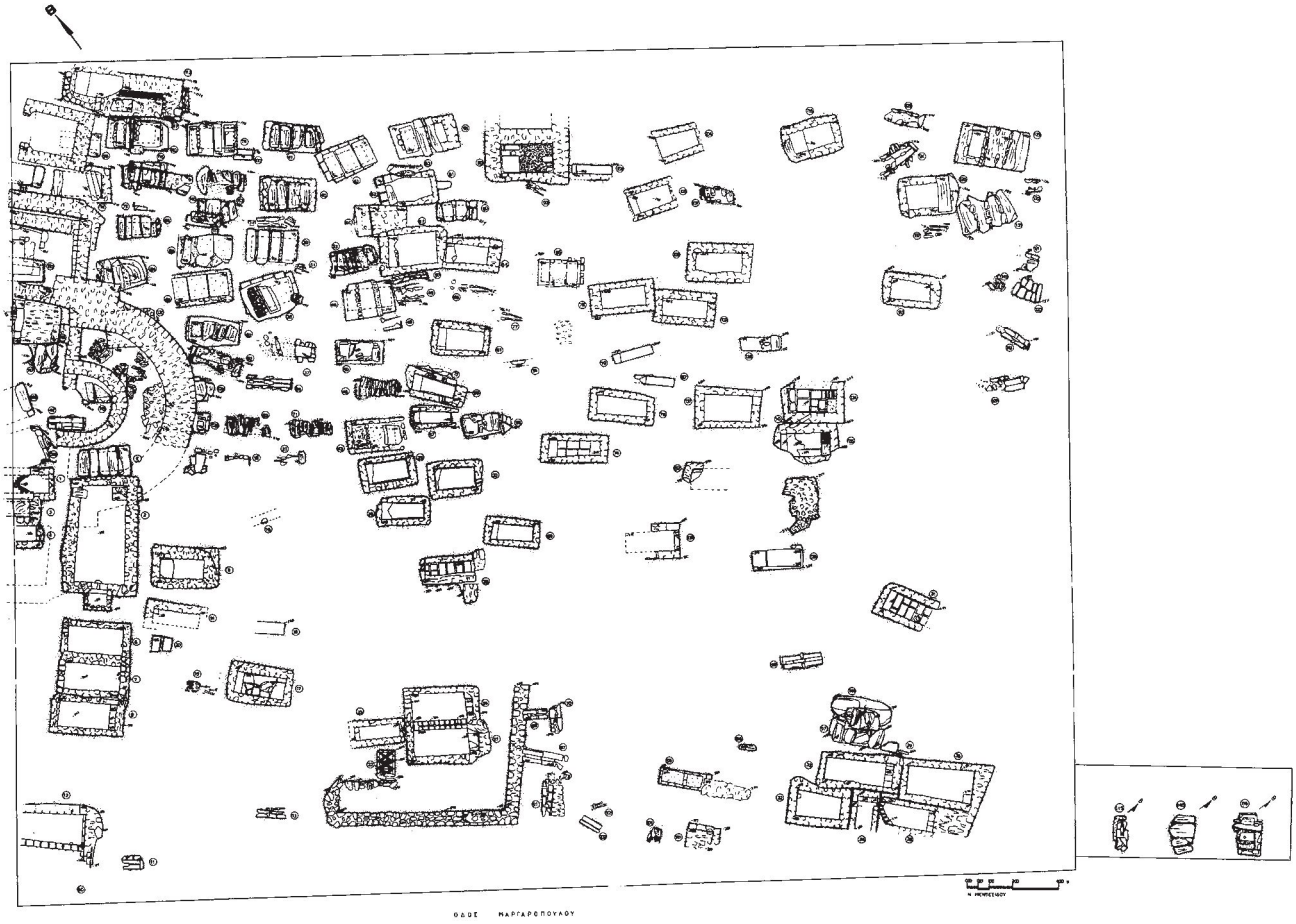


Fig. 366 20 Margaropoulou Street, plan of the excavation.

106
Type: Marble workshop
City: Thessaloniki
Area: Eastern Necropolis (**map:** 3k)
Address: 72 Akropoleōs Street
Date: Early Christian period
Description: During a salvage excavation conducted at 72 Akropoleōs Street, remains of chiseling were discovered.
Bibliography: Makropoulou, To ergo.

Mosaic Workshops

107 **figs 227, 367-371**
Type: Mosaic workshop
City: Thessaloniki
Area: City centre (**map:** 8l)
Address: 3 Agapēs Street
Date: Middle Byzantine period, ninth to twelfth centuries, probably eleventh century
Description: Glassworking remains were found in the ruins of what appear to be at least two houses from the Middle Byzantine period that were discovered during salvage excavations on the site of an Early Christian house (**cat. no. 65**). The Early Christian house had mosaic floors and a small bath. Several coins and a good deal of Middle Byzantine white-clay glazed tableware (vessels) as well as cooking pots were found in the fill of this period and dated to the last decade of the eleventh century. The site was turned into a cemetery in the Late Byzantine period. The glassworking remains included dark blue discoid glass »cakes« made of low-temperature bubbly glass that would have been cut for use as wall mosaic tesserae. In addition, rectangular and circular, flat glass tiles, possibly of some form of opus sectile decoration, and a few glass tesserae were also found. Given that the remains were found close to the mosaic-decorated church of Hagia Sophia, it is evident that there was a workshop, even if only a temporary one, of mosaicists in the city. The tiles can and probably should be connected with marble sculpture intarsia, similar to the ones in tenth-century Constantinopolitan monuments, e. g. the Boukoleōn palace, which were probably already present in sixth-century monuments, such as the churches of Saint Polyeuktos and Saint Euphemia. Furthermore, the same decorative motives appear on polychrome-ware type I fragments found at the same site in the same context. These products of the late tenth century were discarded in the last decade of the eleventh century.
Bibliography: Cat. Athens 2002, 119-120 no. 115a, dated generally to the Middle Byzantine period (I. Kanonidēs). – On the glass finds, see Antonaras, Production and Uses of Glass

193 fig. 15. – On the excavation, see Kanonidēs, Agapēs 3, 490-493. – For the decorative motif on clay tiles and its identification as a product of the Nikomedean workshops active from early tenth to mid-eleventh centuries, see Gerstel, The Nikomedia Workshop, passim esp. 49. – On the Middle Byzantine clay finds, see Kanonidēs, Mesovyzantinē ephyalōmenē keramikē 71-80. – For a short overview of the finds and the technique, see Mundell Mango, Polychrome Tiles 24-25.

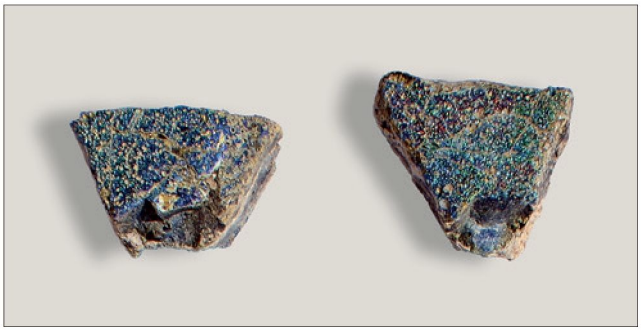


Fig. 367 3 Agapēs Street, glass tesserae »cake«, top side.



Fig. 368 3 Agapēs Street, glass tesserae »cake«, side view.



Fig. 369 3 Agapēs Street, glass tesserae.

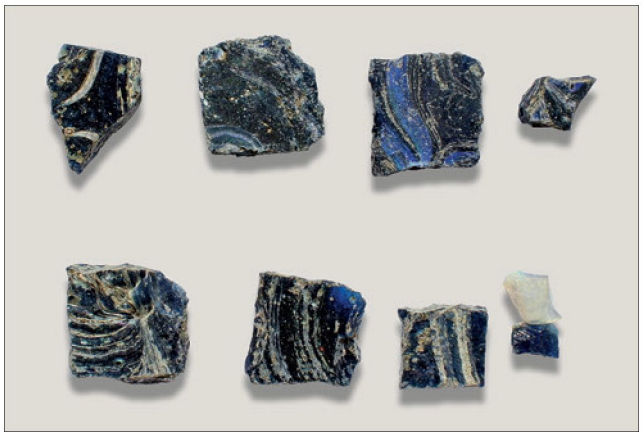


Fig. 370 3 Agapēs Street, glass plaques for intarsia decoration.



Fig. 371 3 Agapēs Street, glass plaques for intarsia decoration.

Other Unidentified Workshops

108 **figs 372-373**
Type: Other unidentified workshop
City: Thessaloniki
Area: West end (**map:** 9f)
Address: 15-17 Mavilē Street
Date: Roman Imperial period

Description: Remains of the structure of a Roman workshop were discovered during salvage excavations conducted on the plot. In the fourth century a house was built here that was used up until the seventh century. Two Roman pottery kilns unearthed in the neighbouring plot (**cat. no. 17**) may be indicative of the nature of this workshop as well.
Bibliography: Cat. Thessaloniki 2003a, 6.

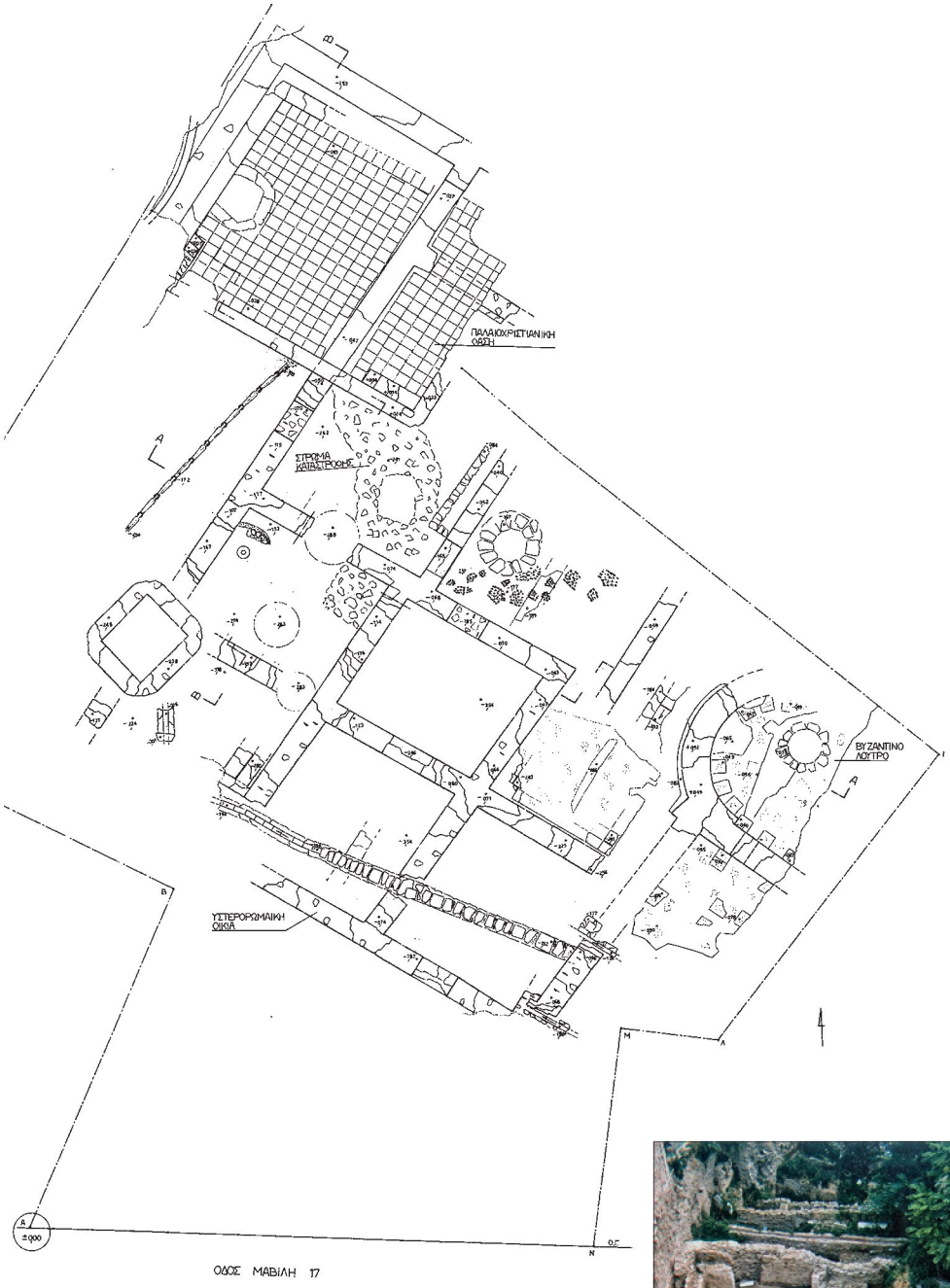


Fig. 372 15 Mavilē Street, plan of the excavation.



Fig. 373 15 Mavilē Street, general view of the excavation.

109 figs 374-375

Type: Other unidentified workshop
City: Thessaloniki
Area: Centre (**map:** 5i)
Address: 73 Olympiados Street
Date: Early Christian period, probably fifth to sixth centuries
Description: Salvage excavations conducted on the site established that a villa with a bath was built on the site in the first half of the fourth century. The site had already been used in the Roman Imperial period. In the Early Christian period the bath was transformed into a workshop that ceased to operate in the late Early Christian period. In the Late Byzantine period part of the site was used as cemetery.
Bibliography: Cat. Thessaloniki 2004, 5.



Fig. 375 73 Olympiados Street, general view of the excavation.

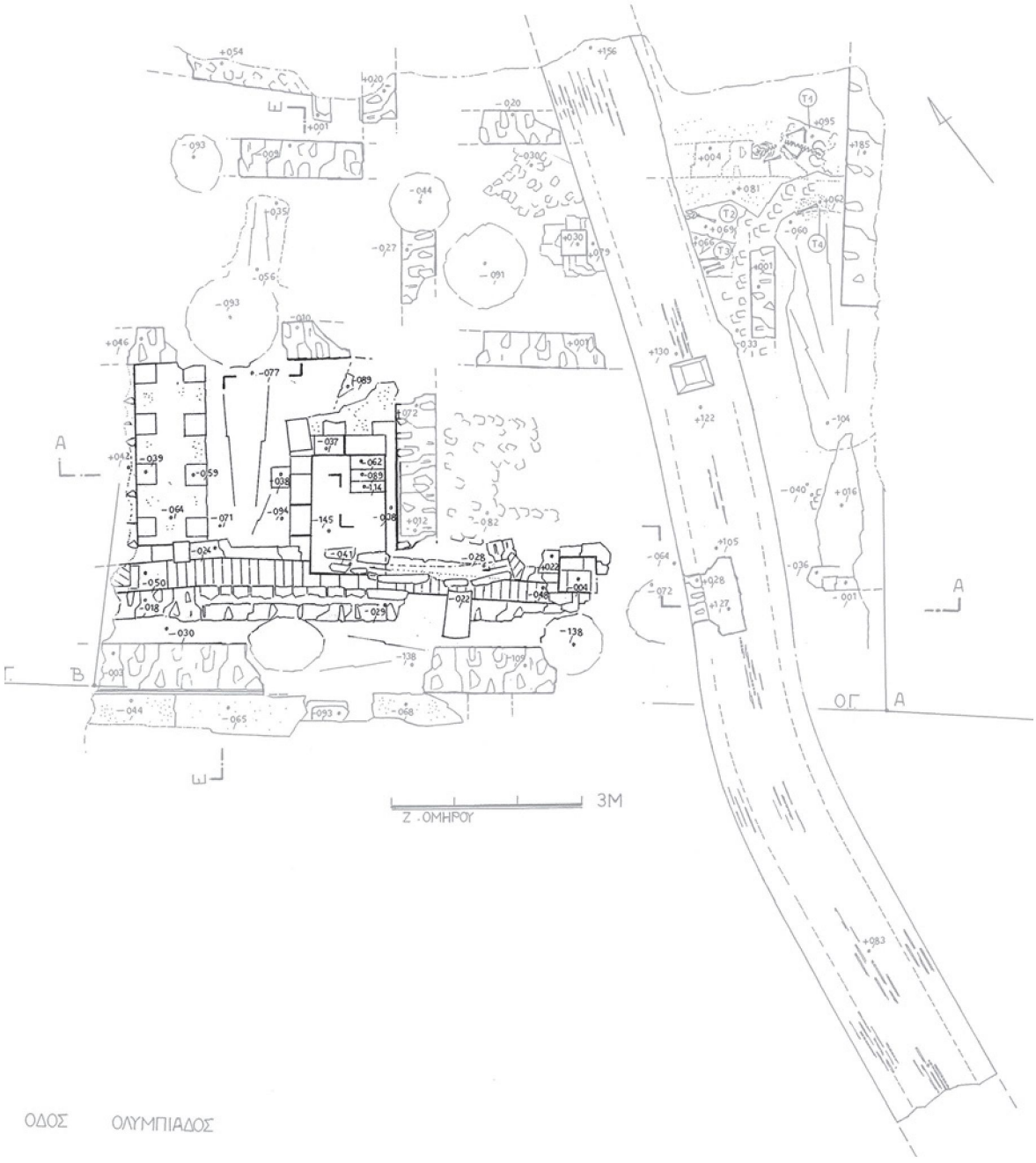


Fig. 374 73 Olympiados Street, plan of the excavation.

110 **fig. 116**

Type: Other unidentified workshop

City: Thessaloniki

Area: City centre (**map:** 8I)

Address: 18 K. Palaiologou Street

Date: Middle and Late Byzantine period (ninth to fifteenth centuries)

Description: Salvage excavations conducted on the site showed that the western part of a large Early Christian bath house was transformed into a workshop in the Middle Byzantine period and continued to operate as such until the fifteenth century.

Bibliography: Kourkoutidou-Nikolaidou, K. Palaiologou 18, 285. – On the excavation generally, see Vitti, Poleodomikē exelixē 220-221 no. 103 fig. XXXII.

111

Type: Other unidentified workshop

City: Thessaloniki

Area: City centre (**map:** 7i)

Address: Agiou Dēmētriou Street, south-east of the basilica, excavation of natural gas pipeline

Date: After the seventh century

Description: Parts of a large public Early Christian building were discovered east of the basilica's apse at the southern part of Agiou Dēmētriou Street during the excavation conducted along the street. It was assumed to be an annex of the Hagios Dēmētrios Basilica, probably a guest house for pilgrims. After the seventh century the eastern part of the building, which had been abandoned by then, was transformed into a workshop.

Bibliography: YPPO, Epitropē parakolouthēsēs 327, 329.

112 **figs 376-378**

Type: Other unidentified workshop

City: Thessaloniki

Area: City centre (**map:** 9f)

Address: 9 Gladstōnos Street

Date: Roman period, probably second century

Description: Two makeshift Roman walls that had probably been destroyed by fire in the second century were discovered under a Late Roman wall during the excavations conducted here. A system of water pipes connected to a well, indicating the artisanal character of the finds, belongs to the same phase.

Bibliography: Karamperē, Gladstōnos 9, 522 fig. 4.

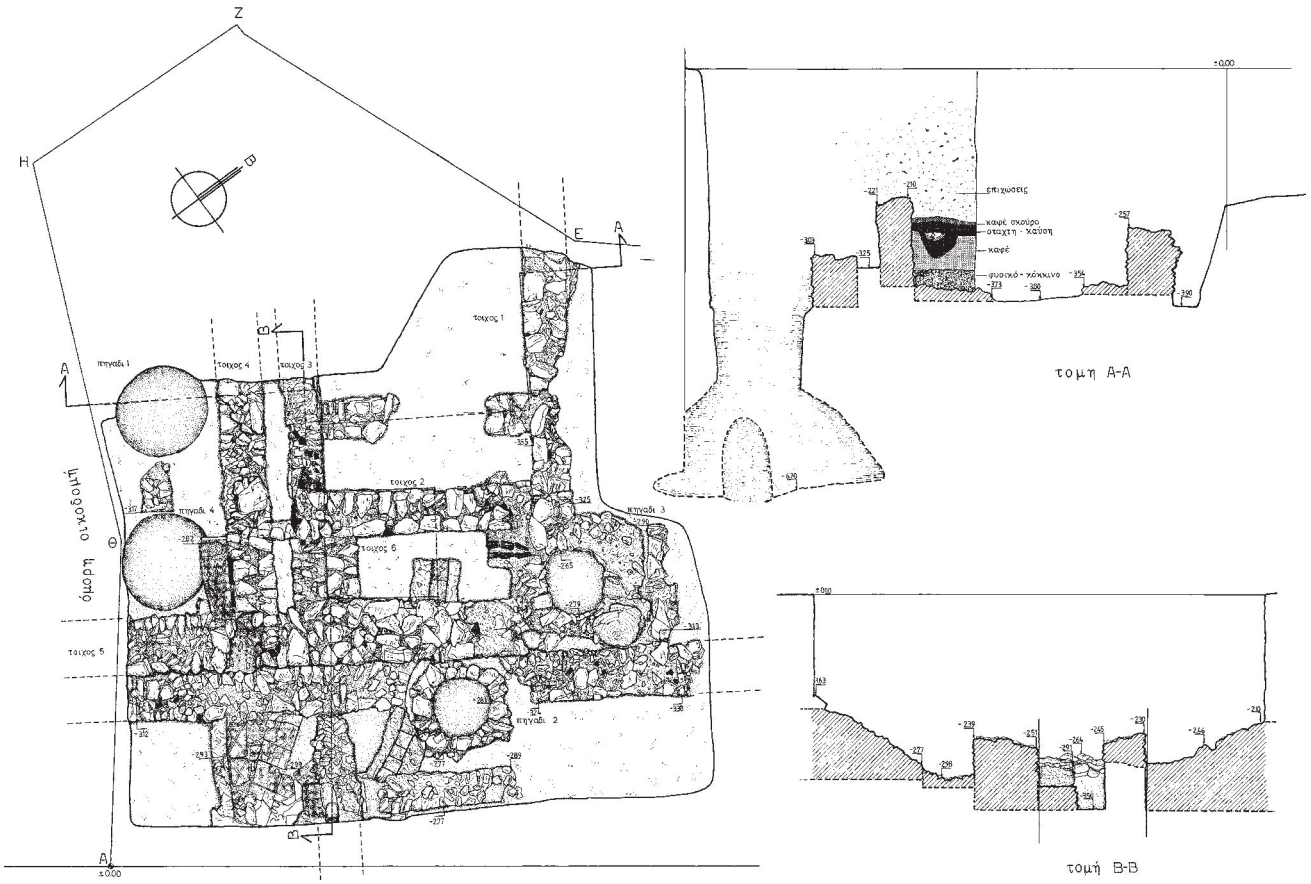


Fig. 376 9 Gladstōnos Street, plan of the excavation.



Fig. 377 9 Gladstōnos Street, general view of the excavation.



Fig. 378 9 Gladstōnos Street, general view of the excavation.



Fig. 379 Lime kilns.

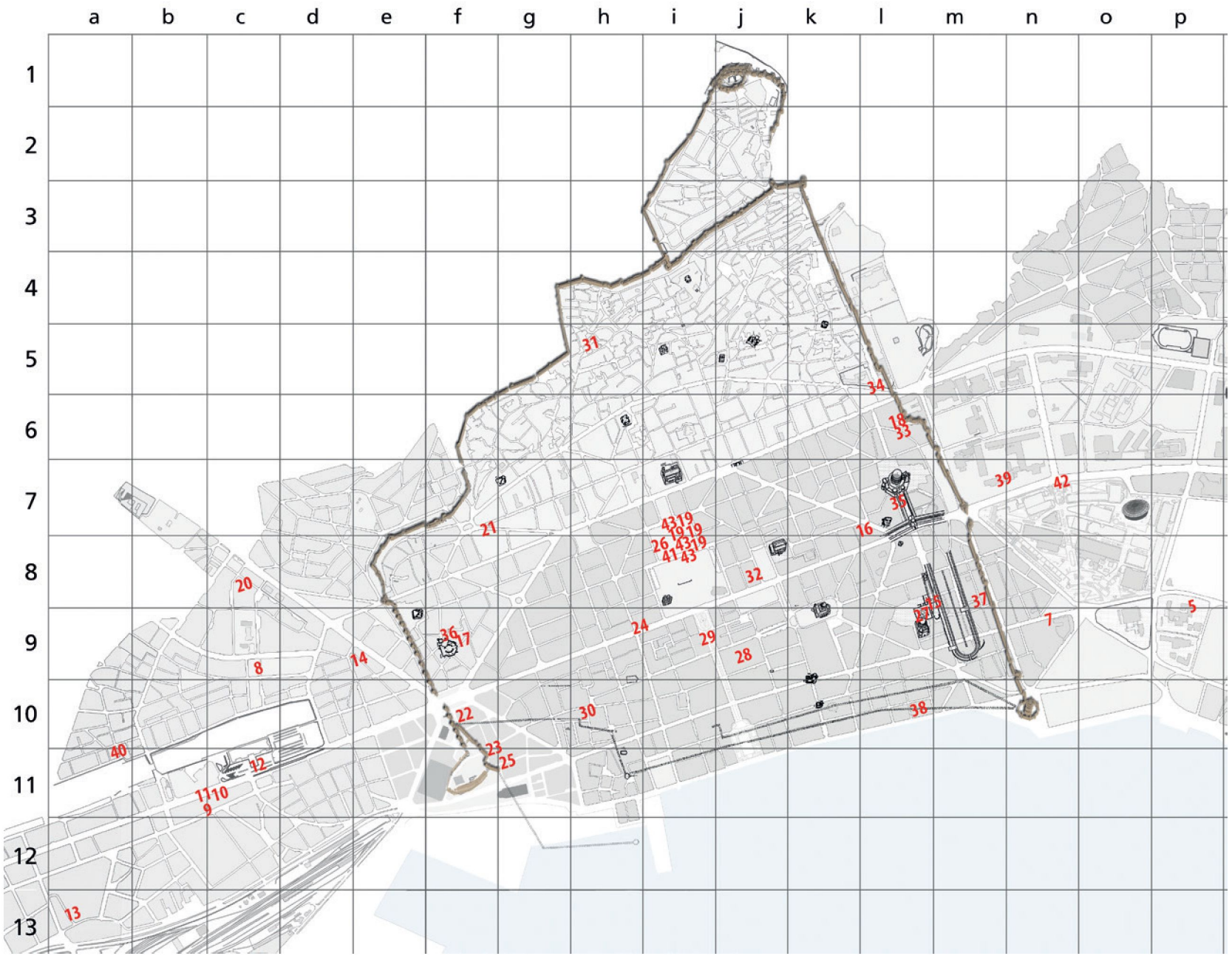


Fig. 380 Ceramic workshops.

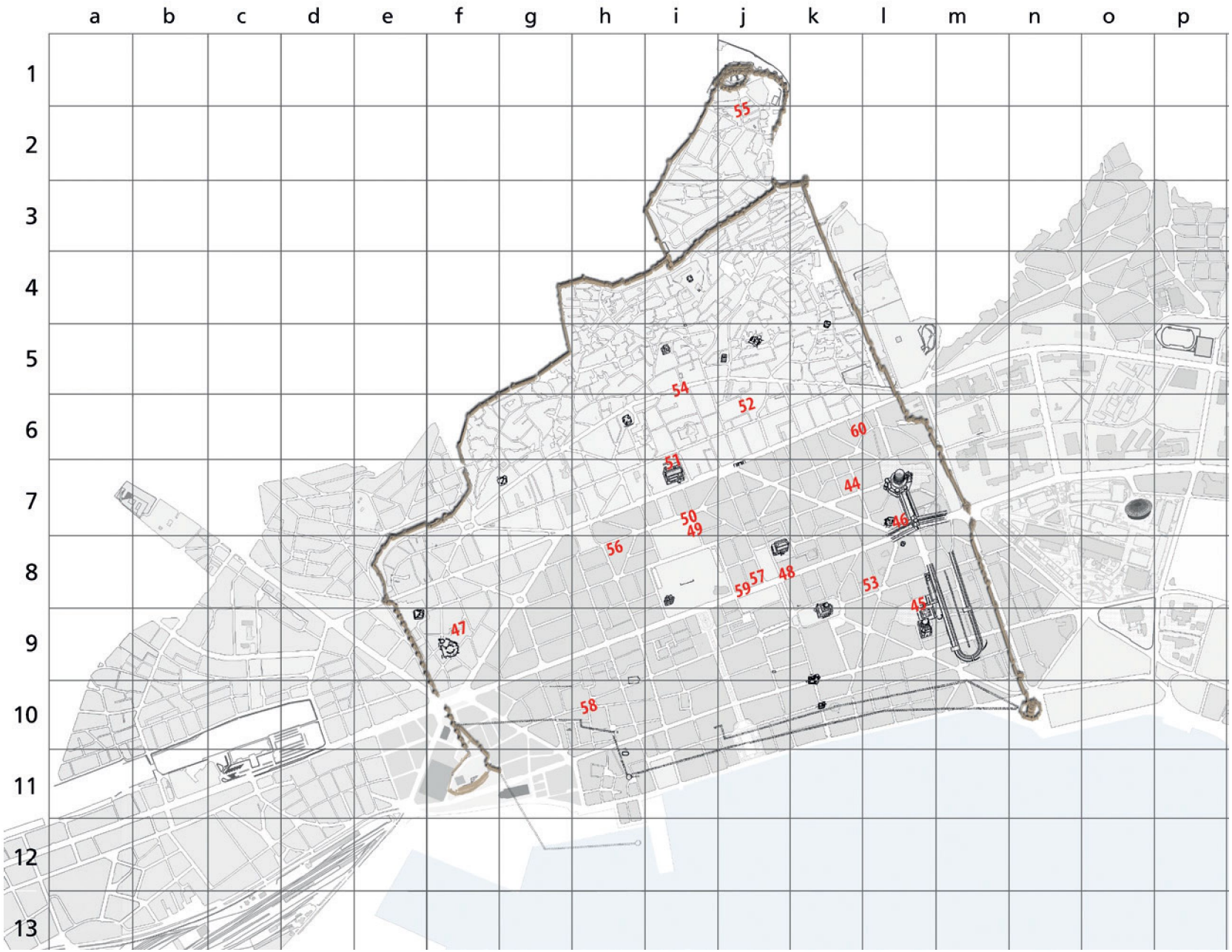


Fig. 381 Metal production workshops.

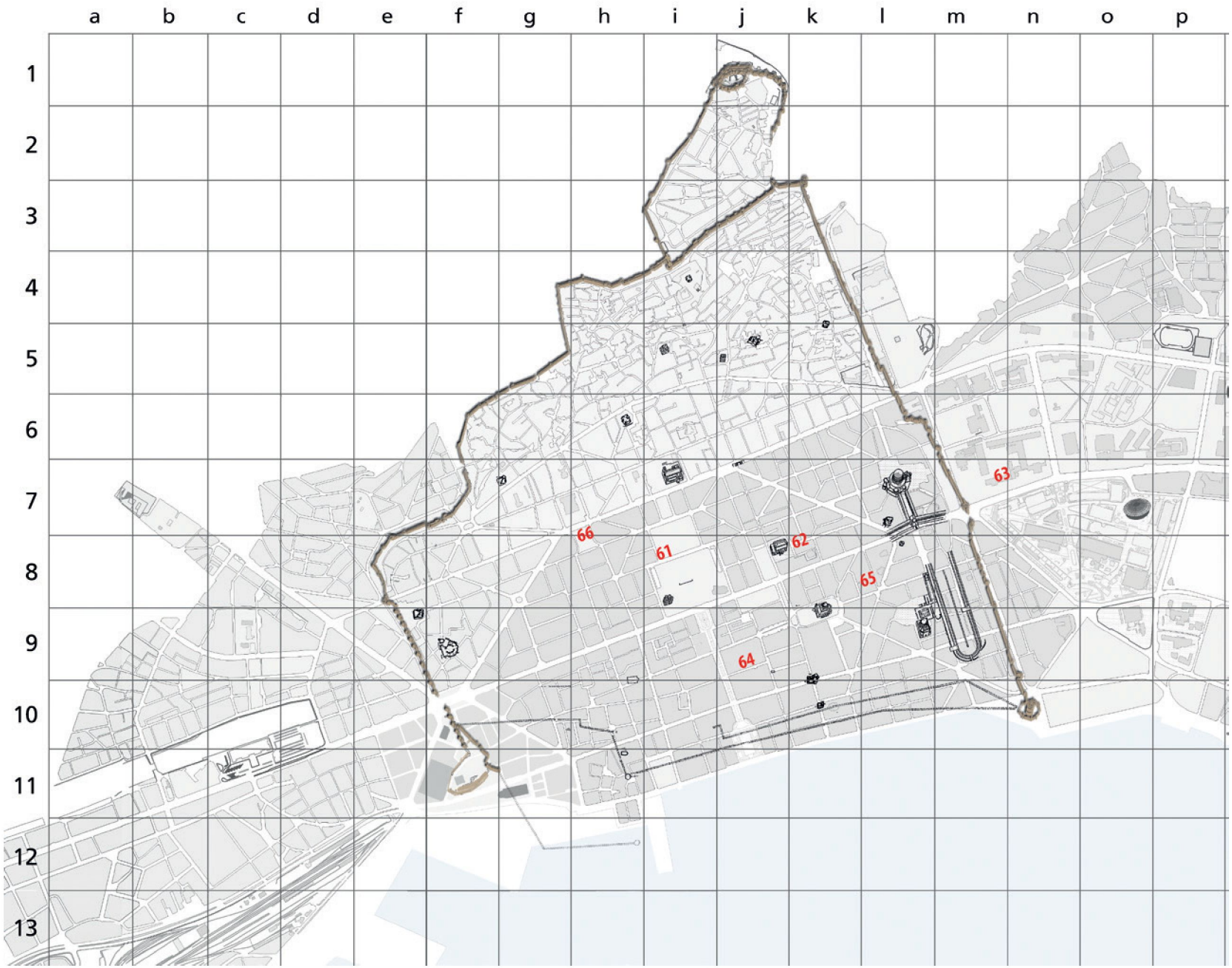


Fig. 382 Glass production workshops.

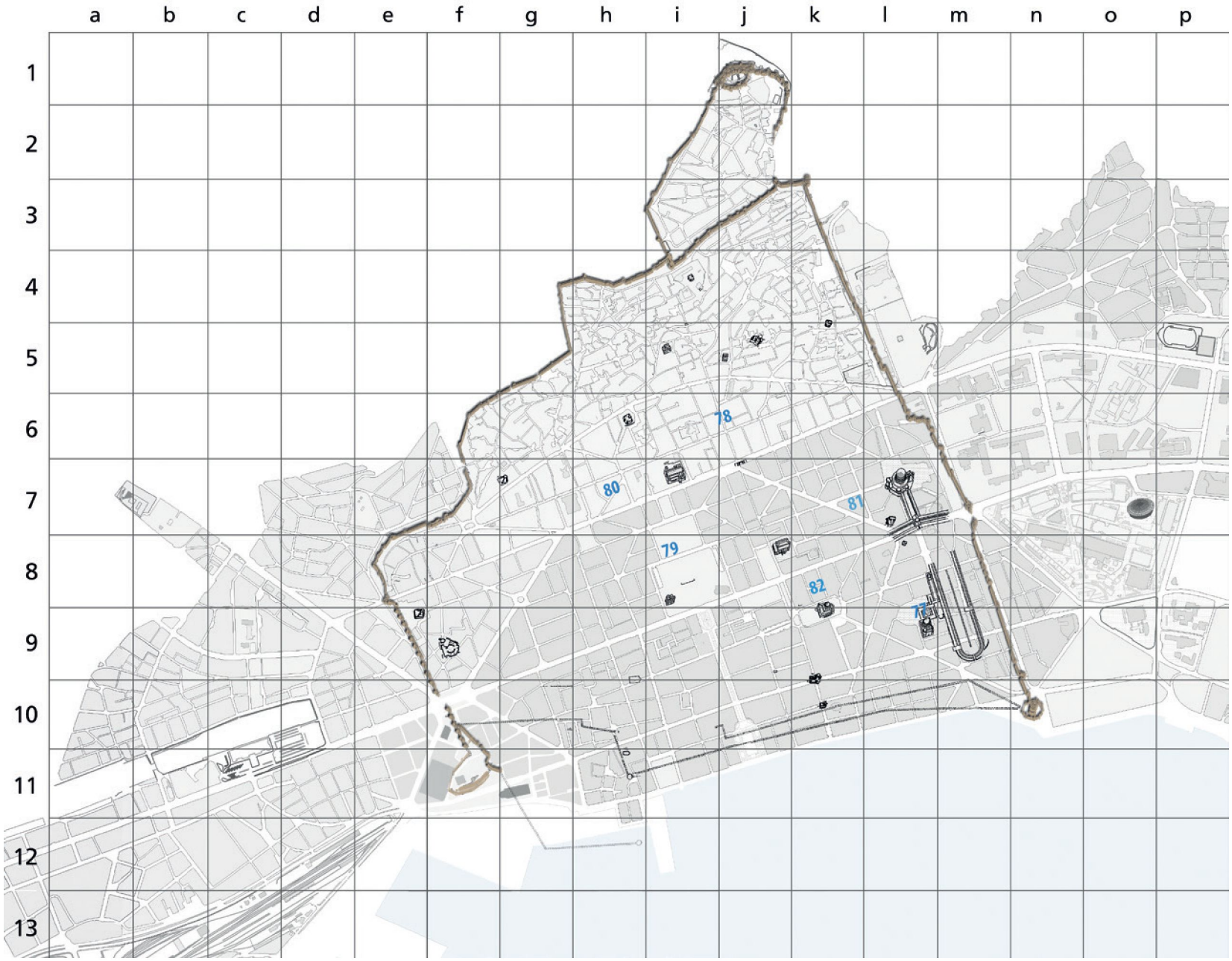


Fig. 383 Dyeworks.

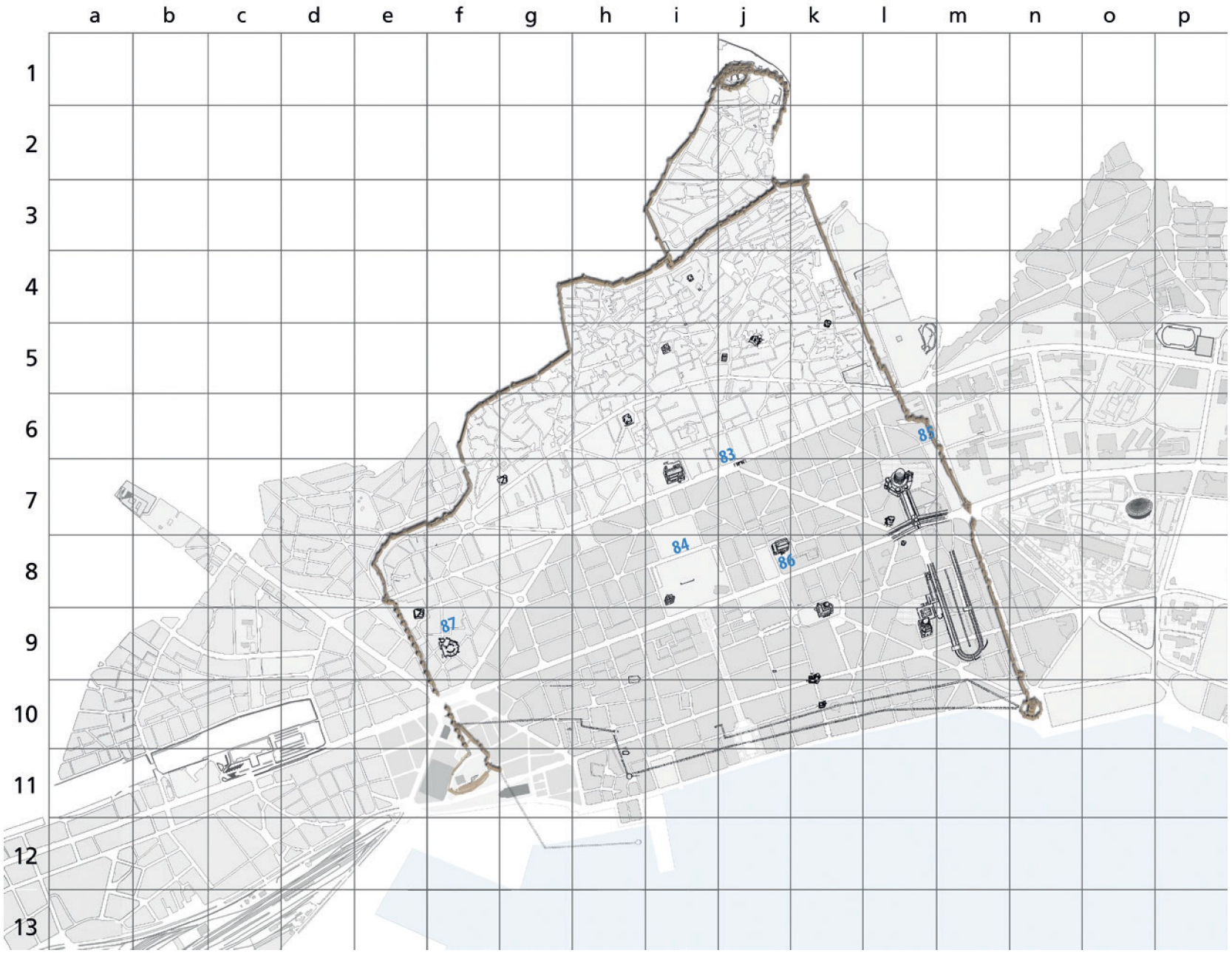


Fig. 384 Tanneries.

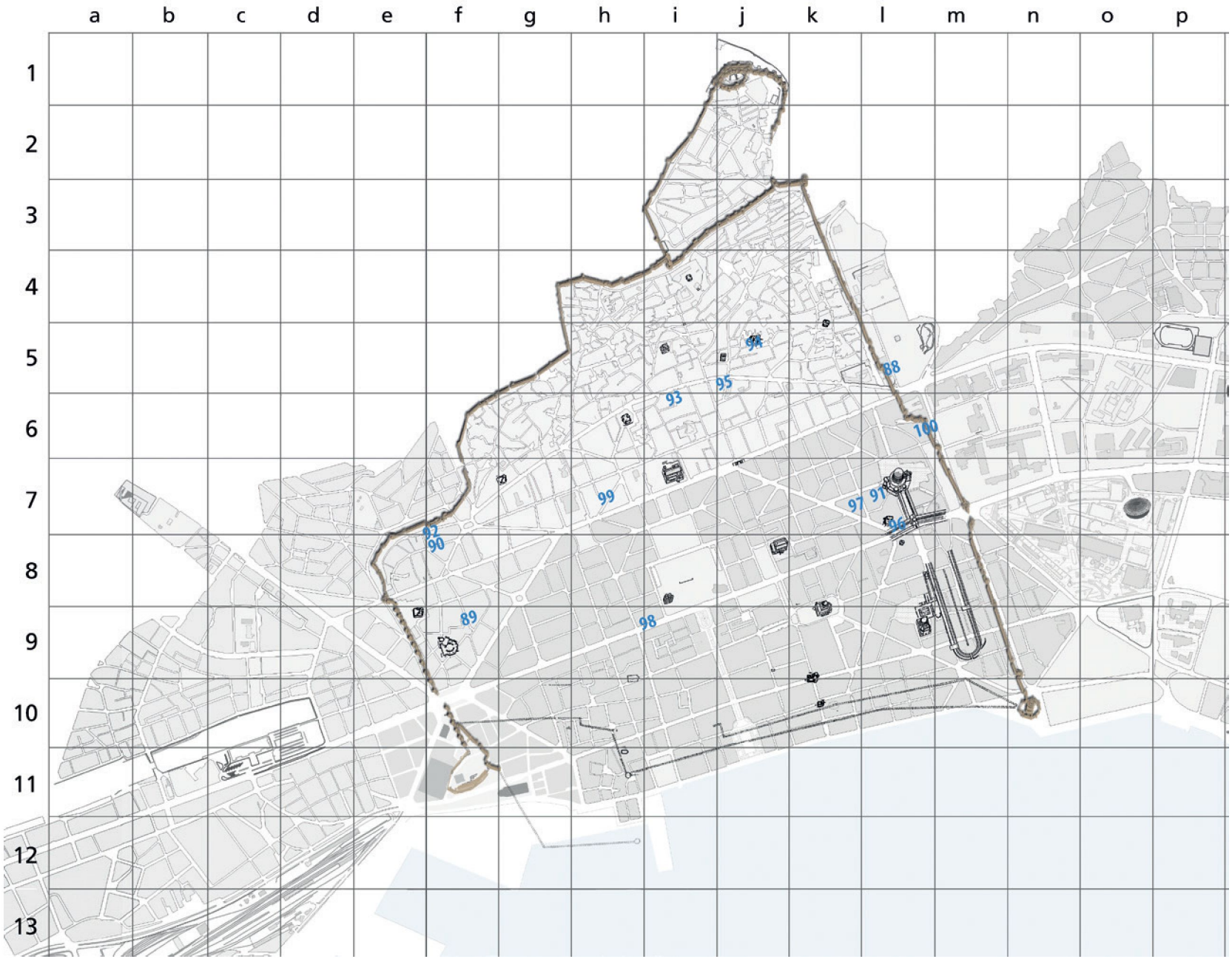


Fig. 385 Unidentified water-related workshops.

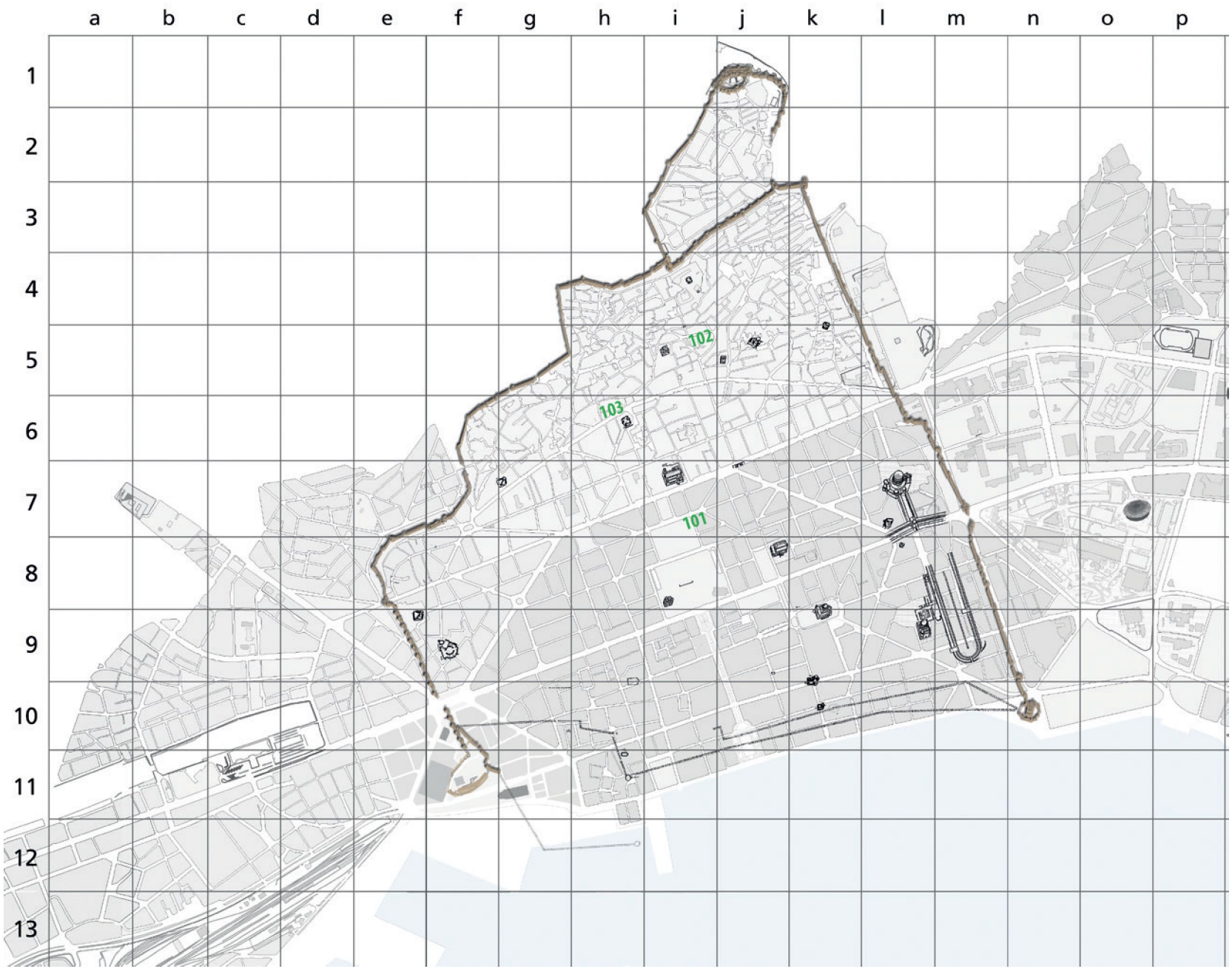


Fig. 386 Bone carving workshops.

Appendix 1: Site List of Workshops

1	Platamōnas, North of the Castle, »Krania« site
2	Ancient Agora
3	24 Tsimiskē Street, Stoa Hirsch
4	45 Vasileōs Ērakleiou
5	2 Leōphoros Stratou, Museum of Byzantine Culture plot
6	Vasilika, SW of the Grammoustikeia watercourse, lot no. 127
7	134 Tsimiskē Street, CHANTH/YMCA playing field
8	G. Kolōniarē, Galanakē and V. Papathanasiou Street
9	48 Giannitsōn Street
10	91 Monastēriou Street
11	93 Monastēriou Street
12	Monastēriou Street, in front of the New Railway Station, Metro Station excavtion
13	Giannitsōn, K. Mazarakē and Kavalas Street
14	58 Promētheōs Street
15	Nauarinou Square, Galerius' complex
16	18 K. Palaiologou Street
17	17 Mavilē Street
18	30A K. Melenikou Street
19	Ancient Agora
20	N. Kapatou, G. Ivanōph and Galanakē Streets, at the plot of the 66th Primary School
21	27-29 Stratēgou Doumpiōti plot and 37 Agiou Dēmētriou and 2 Philōta plot
22	18 Moskōph Street
23	Phrangōn and Moskōph Street
24	Egnatia Street, Venizelou Metro Station excavation
25	East of the Anaglyphou Tower (Olympiou Diamantē Street)
26	Ancient Agora
27	Nauarinou Square, Galerius complex
28	45 Vasileōs Ērakleiou Street
29	19-21 Aristotelous Street
30	28 Phrangōn Street
31	3 Eurymedontos Street
32	67 Egnatia and G. Bakatselou Street
33	30A K. Melenikou Street
34	Olympiados Street, former Third Male Gymnasium's plot
35	D. Gounarē and Vasou Street (today 47 D. Gounarē Street)
36	7 Zephyrōn Street
37	1 Ippodromiou and Manousogiannakē. Plateia Ippodromiou, on the plot of Agiōn Kōnstantinou kai Elenēs Church
38	59 Leōphoros Nikēs – Chrysostomou Smyrnēs – Proxenou Koromēla
39	Department of Theology, Aristotle University of Thessaloniki
40	Chrysospathē and Monachou Samouēl Street
41	Ancient Agora
42	North Gate of HELEXPO
43	Ancient Agora
44	91 Philippou Street
45	Nauarinou Square, Galerius complex
46	2 L. Iasonidou Street
47	7 Zephyrōn Street
48	Egnatia Street, Agias Sophias Metro Station excavation
49	Ancient Agora (the mint)
50	Ancient Agora
51	Surroundings of Hagios Dēmētrios Basilica
52	5 Gyzē Street
53	3 Agapēs Street
54	74 Olympiados Street
55	3 D. Tzacheila Street
56	74 Venizelou Street
57	67 Egnatia and G. Bakatselou Street
58	28 Phrangōn Street
59	Egnatia Street, Venizelou Metro Station excavations
60	3 Phōtakou Street
61	Ancient Agora
62	Acheiropoiētos, east of the basilica
63	Department of Theology, Aristotle University of Thessaloniki
64	45 Vasileōs Ērakleiou Street
65	3 Agapēs Street
66	Dioikētēriou Square, now Kypriōn Agōnistōn Square
67	24 Tsimiskē Street, Stoa Hirsch
68	Between Peristera, Vasilika and Lakkia, near the Grammoustikeia watercourse, Ropalaia site

69	Retziki-Polichnē watercourse, Meteōra site
70	Panorama, Platanorema, Platanakia site
71	Upper city, Koule Kafe
72	Zakynthou and Stanisē Street
73	Evangelistrias Cemetery, formerly the Lyssiatreion Clinic
74	Retziki-Polichnē watercourse, Meteōra site
75	Kastrōn Street
76	South of Peristera, near the Grammoustikeia watercourse
77	Nauarinou Square, Galerius' complex
78	75 Agias Sophias Street
79	Ancient Agora, south street
80	7 L. Paster and Mētropolitē Iōakeim Sgourou Street
81	6 L. Iasonidou Street
82	6 Prasakakē, and N. Koukouphlē Street
83	2 Sophokleous Street
84	Ancient Agora, *cryptoporticus*
85	18 K. Melenikou Street
86	52 Agias Sophias Street
87	12 Zephyrōn Street
88	Kastrōn Street
89	Pheidiou and 12 Zephyrōn Street
90	4A Eratous Street
91	28 Patriarchou Iōakeim Street and Agiou Geōrgiou Square
92	4A Eratous Street
93	7 Glaukou Street
94	10-12 Aiolou Street
95	Kōnstantakopoulou and 6 Thēseōs Street
96	2 L. Iasonidou Street
97	6 L. Iasonidou Street
98	Egnatia Street, Venizelou Metro Station excavations
99	7 L. Paster and Mētropolitē Iōakeim Sgourou Street
100	18 K. Melenikou Street
101	Ancient Agora
102	Antiochou, parodos
103	Olympiados and Sakellariou Street
104	Dēmokratias Square
105	20 Margaropoulou Street
106	72 Akropoleōs Street
107	3 Agapēs Street
108	15-17 Mavilē Street
109	73 Olympiados Street
110	18 K. Palaiologou Street
111	Agiou Dēmētriou Street, south-east of the basilica, excavation of natural gas pipeline
112	9 Gladstōnos Street

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Comment on Illustrations

Most of the excavation plans have been significantly altered by the author in order to illustrate the operational period of the workshop at each site and to reduce the information regarding other periods that might render the plan confusing or misleading.

Appendix 3: List of Museum Objects Illustrated

1. Museum of Byzantine Culture, Thessaloniki, ΒΚ 4506/7, ΒΚ 4506/12, ΒΚ 4506/33, ΒΚ 4544/5
2. Museum of Byzantine Culture, Thessaloniki, ΒΚ 4451
4. Museum of Byzantine Culture, Thessaloniki, ΒΥ 180, ΒΥ 209/2, ΒΥ 217/5, ΒΥ 227/3, ΒΥ 227/17, ΒΥ 227/41, ΒΥ 227/42, ΒΥ 244/1, ΒΥ 255/2
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8. Museum of Byzantine Culture, Thessaloniki, ΒΑ 57/1, ΒΑ 57/2
9. Museum of Byzantine Culture, Thessaloniki, ΑΓ 1388, ΒΑ 69
10. Museum of Byzantine Culture, Thessaloniki, ΒΑ 71
11. Museum of Byzantine Culture, Thessaloniki, ΒΧ 234/2
12. Museum of Byzantine Culture, Thessaloniki, ΒΧ 254/1
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16. Museum of Byzantine Culture, Thessaloniki, ΑΓ 1501
18. Museum of Byzantine Culture, Thessaloniki, ΒΨ 38
19. Museum of Byzantine Culture, Thessaloniki, ΒΨ 38
20. Museum of Byzantine Culture, Thessaloniki, ΒΤ 17
21. Museum of Byzantine Culture, Thessaloniki, ΒΤ 136, ΒΨ 38
23. Museum of Byzantine Culture, Thessaloniki, ΒΕ 272
25. Museum of Byzantine Culture, Thessaloniki, ΒΚ 3088/18, ΒΚ 3088/19
26. Museum of Byzantine Culture, Thessaloniki, ΒΥ 244, ΒΥ 298/2-6, ΒΧ 253/664
28. Museum of Byzantine Culture, Thessaloniki, ΒΧ 313/1
29. Museum of Byzantine Culture, Thessaloniki, ΒΜο 7
30. Museum of Byzantine Culture, Thessaloniki, ΒΑ 4
31. Museum of Byzantine Culture, Thessaloniki, ΒΑ 74/15
32. Museum of Byzantine Culture, Thessaloniki, ΒΛΜ 53/3
33. Museum of Byzantine Culture, Thessaloniki, ΑΓ 3152
34. Museum of Byzantine Culture, Thessaloniki, ΑΓ 3117
37. Museum of Byzantine Culture, Thessaloniki, ΒΥφ 34
40. Museum of Byzantine Culture, Thessaloniki, ΒΚ 4519/192
41. Museum of Byzantine Culture, Thessaloniki, ΒΚ 847
42. Museum of Byzantine Culture, Thessaloniki, ΒΚ 10 (2 pcs), ΒΚ 50/2, ΒΚ 871/82, ΒΚ 909/14, ΒΚ 2099, ΒΚ 2279/6, ΒΚ 4578/7
43. Museum of Byzantine Culture, Thessaloniki, ΒΚ 589, ΒΚ 591, ΒΚ 885/58, ΒΚ 1500, ΒΚ 2172, ΒΚ 2191, ΒΚ 2198, ΒΚ 2213, ΒΚ 4470/139, ΒΚ 4519/93, ΒΚ 4519/103, ΒΚ 4519/263, ΒΚ 4568/38-43, ΒΚ 4578/6, ΒΚ 4579/13-16, ΒΚ 4579/17-19, ΒΚ 4614
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46. Museum of Byzantine Culture, Thessaloniki, ΒΥ 34, ΒΥ 212/2, ΒΥ 212/3
48. Museum of Byzantine Culture, Thessaloniki, ΒΚο 271/138
49. Museum of Byzantine Culture, Thessaloniki, ΒΚο 247/11
50. Museum of Byzantine Culture, Thessaloniki, ΒΜο 36
52. Museum of Byzantine Culture, Thessaloniki, ΑΓ 773
53. Museum of Byzantine Culture, Thessaloniki, ΑΠ 32
58. Museum of Byzantine Culture, Thessaloniki, ΒΥφ 57
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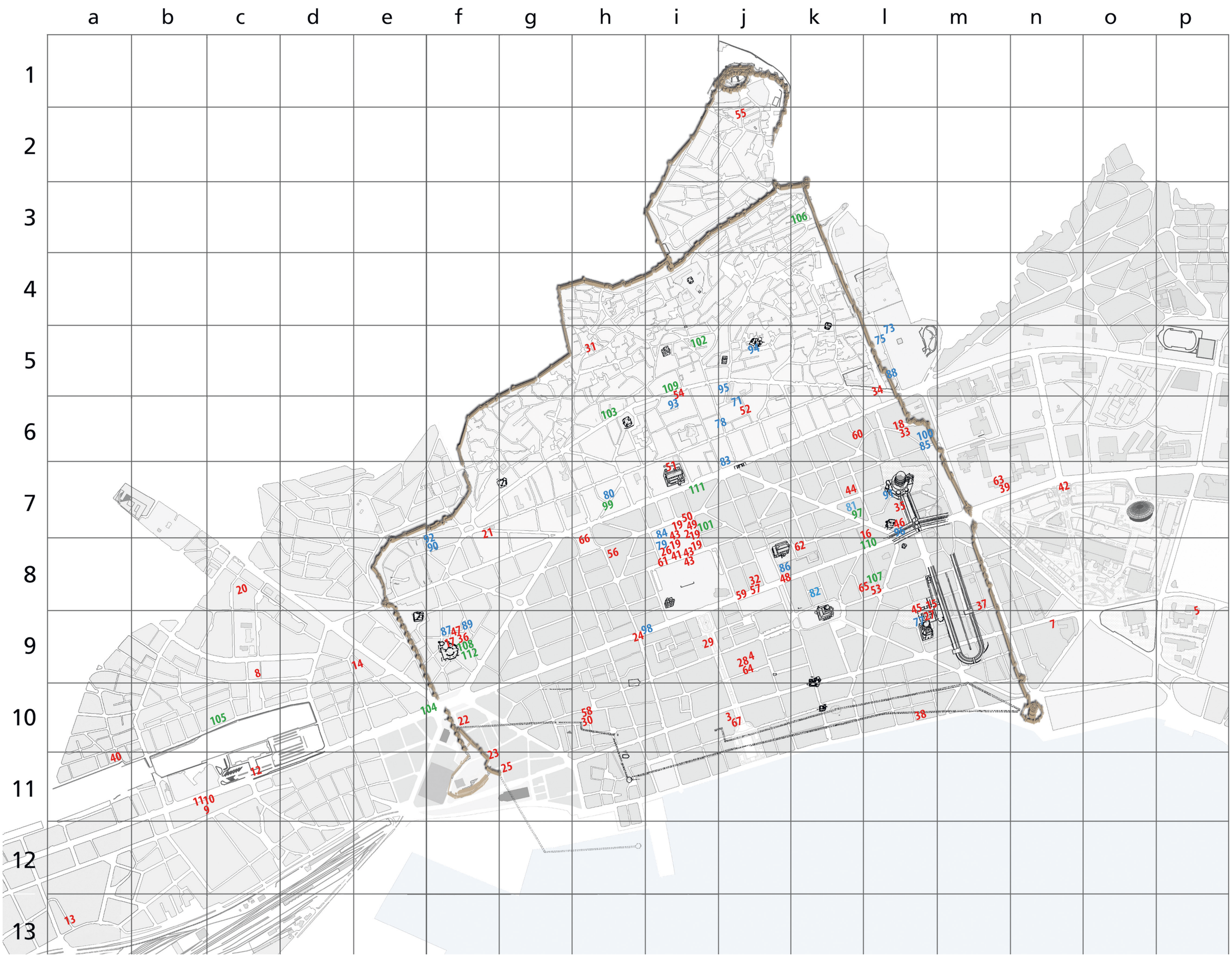
Siglen der Reihe Byzanz zwischen Orient und Okzident

AJA	American Journal of Archaeology
BF	Byzantinische Forschungen
BMGS	Byzantine and Modern Greek Studies
BSOAS	Bulletin of the School of Oriental and African Studies
BZ	Byzantinische Zeitschrift
CahArch	Cahiers archéologiques
CFHB	Corpus Fontium Historiae Byzantinae
CSHB	Corpus Scriptorum Historiae Byzantinae
DOP	Dumbarton Oaks Papers
DOS	Dumbarton Oaks Studies
EI¹	Enzyklopädie des Islam (Leiden/Leipzig 1913-1934)
EI²	Encyclopaedia of Islam. New Edition (Leiden u. a. 1954-2004)
IstMitt	Istanbuler Mitteilungen
JbAC	Jahrbuch für Antike und Christentum
JESHO	Journal of the Economic and Social History of the Orient
JÖB	Jahrbuch der Österreichischen Byzantinistik
LMA	Lexikon des Mittelalters
OCP	Orientalia Christiana Periodica
ODB	The Oxford Dictionary of Byzantium
RbK	Reallexikon zur byzantinischen Kunst
REB	Revue des Études byzantines
ROC	Revue de l'Orient chrétien
RSBN	Rivista di Studi Bizantini e Neoellenici
TIB	Tabula Imperii Byzantini
VV	Vizantijskij vremennik
ZDMG	Zeitschrift der Deutschen Morgenländischen Gesellschaft
ZRVI	Zbornik Radova Vizantološkog Instituta



Archaeologically attested workshops in Thessaloniki. Red: sites with indications of the use of open fire; blue: sites with use of water; green: sites without clear determination of activities. See p. 93.