

# 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<sup>6</sup>. Groups of foreign traders were active in Thessaloniki, extending their activities into the city's hinterland<sup>7</sup>, from the late Hellenistic period and during the Roman Imperial period<sup>8</sup>. Characteristic examples presented by the Roman traders (*negotiatores*)<sup>9</sup> organised in communities (*Conventus Civium Romanorum*), the Jewish traders and artisans, known through the Acts of the Apostles<sup>10</sup> and others, mainly from Asia Minor and Levant<sup>11</sup> whose presence in the city escaped oblivion<sup>12</sup> thanks to the epigraphic evidence of funerary inscriptions, such as the *myropōlēs* (μυροπώλης, fragrance seller) Gaios Ostios Eros Insteianos<sup>13</sup>.

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<sup>14</sup>. 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<sup>15</sup> remained open and operational, providing the city with goods and merchandise from other regions<sup>16</sup>.

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 concise 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 Ἡρώνος Αὐλώνιτου) 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, *Sympromateuomenoi 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 Meletse, *Parousia Evraïōn* 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, *Mneis 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 (Χρῆσιμος) 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 Chrēsīmē, 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<sup>17</sup>. In any case, it is evident that already in the second century BC, the city possessed organised port facilities<sup>18</sup>.

### 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<sup>19</sup>. 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<sup>20</sup>. 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*<sup>21</sup>, 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)<sup>22</sup>. 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<sup>23</sup>, 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<sup>24</sup>. Furthermore, between these two main streets, two more ancient streets are preserved, being today Olympou and Filippou Streets<sup>25</sup>. 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 nineteenth century<sup>26</sup>.

### 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<sup>27</sup>. 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<sup>28</sup>. 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<sup>29</sup>. 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<sup>30</sup>.

### 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<sup>31</sup>. 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<sup>32</sup>.

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 Spiesser, 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, Ysteroarchaikos 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, Thessalonike, neraida 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<sup>33</sup>. 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<sup>34</sup>. 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<sup>35</sup>. 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<sup>36</sup>.

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<sup>37</sup>.

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* (Εἰδῶλα), and notable for its mythological carvings was still standing until the mid-nineteenth century when it was dismantled and partly transported to France<sup>38</sup>.

## Palace

It is known that there was a palace in the city in the second century BC<sup>39</sup>. 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<sup>40</sup>. Cicero, who was in exile in Thessaloniki during 58-57 BC, mentioned a *quaestorium* (the residence of the *quaestor*)<sup>41</sup>, 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<sup>42</sup>.

## 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<sup>43</sup>. 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<sup>44</sup>.

## 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<sup>45</sup>. 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, Bibliotheca Historica XXXII 15.2. »τὸν δ' ἕτερον ἐν Θεσσαλονικῇ, 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/Kaiafa, 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 excavations 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<sup>46</sup>.

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<sup>47</sup>.

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<sup>48</sup>.

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<sup>49</sup>. The square port of the city was protected by a breakwater, later known as *Tzerempoulon* (Τζερέμπουλον)<sup>50</sup>. 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 Dēmētriu 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<sup>51</sup>. 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*<sup>52</sup>.

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<sup>53</sup>. A similar building existed at the eastern end of the city outside the walls. It operated between the fourth and the sixth centuries<sup>54</sup>. 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<sup>55</sup>. 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<sup>56</sup>.

### 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<sup>57</sup>. During the Early Christian period and especially in the fifth century, large Christian churches were erected on the sites of these complexes<sup>58</sup>. These were: the basilica under the seventh-century Hagia Sophia, which was probably dedicated to Saint Mark<sup>59</sup>; the Basilica of Acheiropoiētōs<sup>60</sup>; and the three-aisled basilica under the Hagios Dēmētrios complex<sup>61</sup>. 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 ypodomes* 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 τῆ Θεσσαλονικῆ ἐπιβαίνει, καὶ τῷ τόπῳ ἀρεσθεὶς δυοὶ χρόνοι ἐκεῖ διατριβῆ ναοὺς τε θαυμασίου καὶ λουτρὰ καὶ ὕδατων 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 κάλλιτε καὶ μεγέθει θαυμαστῶς διακειμένους κοσμήσας ἀλλὰ καὶ ὕδατων 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, *Ydrotika 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 ydromasteutēs* 285-292; Akrivopoulou, *Ydatogēphyra 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, *Evraïkēs synoikies* 20-22.

51 Velenēs, *Ta teichē passim*.

52 Velenēs, *Ta teichē* 62-63. – Bakirtzēs, *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, *Epicheirematikotēta* 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/Tzevenē, *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. – Čurčić, *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 Acheiropoiētōn* 472-487. – Bakirtzēs, *Sur le donateur* 37-44. – Papazōtos, *O megalos naos* 121-131. – Kourkoutidou-Nikolaidou, *Acheiropoiētōs*. – Tampakē, *Thessalonikē* 134-146, for bibliographic overview and travellers' accounts.

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

founded at the western part of Agiou Dēmētriou Street<sup>62</sup>. The Rotonda of the Galerian complex was also converted into a church<sup>63</sup>, and a large octagonal church<sup>64</sup> was founded at the west end of the city, almost mirroring the Rotonda<sup>65</sup>. 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<sup>66</sup>.

## 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<sup>67</sup>. 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<sup>68</sup>. 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<sup>69</sup>. Finally, further uphill to the north, at modern 91 Philippou Street, there was a Hellenistic forge<sup>70</sup>.

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<sup>71</sup>. 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 copper-smiths' 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<sup>72</sup>.

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-Nikolaïdou/Tourta, *Peripatoi* 48-69.

64 Markē, *Enas oktagōnikos naos* 117-133.

65 Čurčić, *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 prospata 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 axilogēsē* 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<sup>73</sup>.

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<sup>74</sup>. 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<sup>75</sup>. 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<sup>76</sup>.

## 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<sup>77</sup>. 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<sup>78</sup>. 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<sup>79</sup>.

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<sup>80</sup> (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<sup>81</sup> (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, *Archaio-logikes ereunes* (cat. no. 1).
- 76 Velenēs et al., *Programma Archaia 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, *Archaio-logika tekmeria* 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-Nikolaïdou, 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: Nalpanētēs, *Oikopedo* 381. – Nalpanētēs, *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. Papatthanasiou Streets: Nalpanētēs, Kolōniarē – Galanakē – Papatthanasiou 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 romaikōn 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. Iwanōph and Galanakē Streets, at the plot of the 66<sup>th</sup> Elementary School, where four kilns (two semicircular and two ellipsoidal ones) were unearthed, see Makropoulou, *Taphoi kai taphes* 373 nt. 240. – Archives of the 16<sup>th</sup> 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 Theodoridēs, *To ktēmatologio* 417-418. – Papangelos, *Agramades* 65-66.
- 80 Nalpanētēs, *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-Velenēs, *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<sup>82</sup>. 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 Acheiropoiētōs Basilica, the five-aisled basilica underneath Hagia Sophia and the Christian parts of the Rotonda – are made with bricks marked with the same stamps<sup>83</sup>. 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 *keramēnios 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 Hadjityrphonos, *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, *Symbolē meletēs paragōgēs* 108-109. – Theodoridēs, *To ktēmatologio* 414. – In addition, for stamps on the bricks of Acheiropoiētōs, 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<sup>84</sup>.

## 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<sup>85</sup>. 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<sup>86</sup>. 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: »ἐλθὲν εἰς τὰ πρὸς ἡμᾶς μέρη, καὶ κρατήσῃ τὸν Κεραμῆσιον κάμπον.« [(upon) arriving in our region, he occupied the *Keramēsiōs kampos*]. For the bibliography on locating the site in various other places, see Bakirtzīs, *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. Papatthanasiou Streets (cat. no. 8) dated to the Early Christian period, Nalpentēs, Kolōniarē – Galanakē – Papatthanasiou 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 romaikōn klivanōn*. – For a thorough presentation and interpretation of the workshop, see Raptīs, *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 Raptīs, *Ergastēria* 71-75, 186-202. – Also Raptīs, *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.



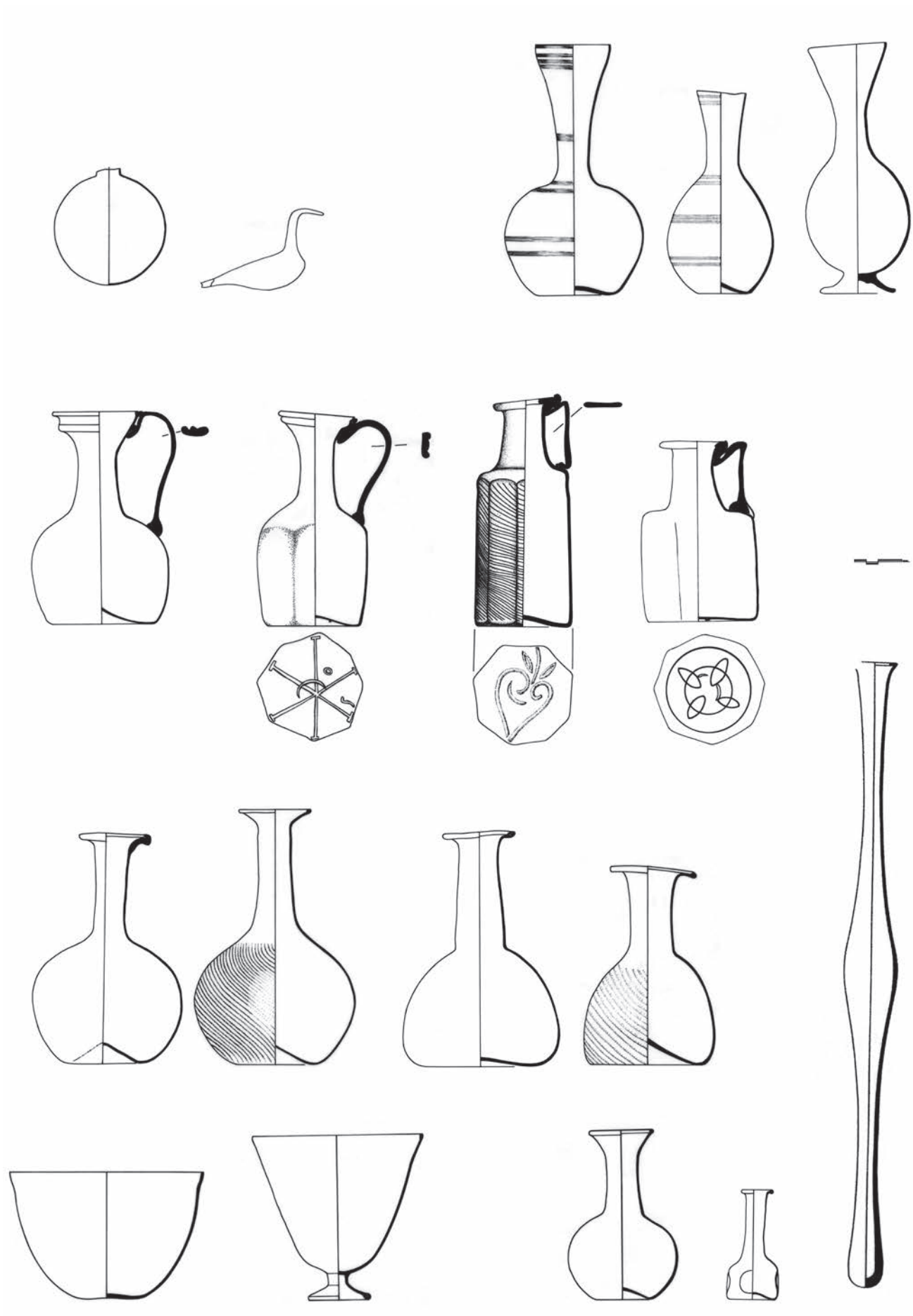


Fig. 5 Drawings of locally produced glass vessels, first and fourth to fifth centuries.



Fig. 6 Glass furnace, Thessaloniki, 45 Vasileōs Ērackleiou 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<sup>87</sup>. 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<sup>88</sup>. 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<sup>89</sup> (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<sup>90</sup>. 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<sup>91</sup> (fig. 6). Fur-

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

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

89 Antōnarak, Vasileōs Ērackleiou 263-272. – Antonarak, An Early Christian Glass Workshop 95-113. – Antonarak, A Special Group 9-10. – Antōnarak, Mia idi-aiterē omada.

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

91 Antōnarak, Rōmaikē kai palaiochristianikē yalourgia 61-72. – Antōnarak, 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<sup>92</sup> (**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<sup>93</sup>. 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<sup>94</sup>. Early Christian metalsmiths' workshops have been identified in the centre of the city and near the western city walls<sup>95</sup>, 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, mica-

ceous 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<sup>96</sup>. Furthermore, two Late Roman moulds for the production of jewellery were found in the area of the city's Ancient Agora<sup>97</sup>. 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<sup>98</sup>.

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*)<sup>99</sup>. 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 ANEΘETO† (*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*<sup>100</sup>.

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 Antōnarak, Vasileōs Ērakleiou 263-272. – Antonarak, An Early Christian Glass Workshop. – For a similarly placed workshop in the neighbouring city of Edessa see Antonarak/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 statues 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 Archaia 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/Tzevenē, 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, Enkatasastē 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 Tafrafi, Topographie de Thessalonique 126 nt. 2. – Bakirtzis, Agiou Dēmētriou Thaumata 37, 350 *Passio Altera* γ' in Miracles 1997, 36: »ἐκ δυσμῶν του τῆς πόλεως μεγαλοφόρου ἐν τῇ ἐκείσε Χαλκευτικῆ λεγομένη στοᾶ« [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, Mesaionika Makedonias 235-240. – Cat. Thessaloniki 2011a, 171-172 no. 64 (A. Antonarak). On the find in general, see Antōnarak, Oreichalkina 21-22. – Antōnarak, 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 Antonarak, 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.

not clear which ones were locally produced<sup>101</sup>. 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<sup>102</sup>. However, the throne was not destroyed, because a Master Mēnas donated seventy-five *litrae* (pounds) and an

101 Bakirtzis, Imports, Exports and Autarchy 98-100. – Bakirtzēs, Agiou Dēmētriou Thaumata 1:1 §23: «κάτεισιν εἰς τὸ πραιτώριον αὐτοῦ· καὶ ἄρας ὧν ἐχρηζεν, ἄνεισι πάλιν εὐθύς ἐπὶ τὸν σεβάσμιον οἶκον τοῦ μάρτυρος καὶ προσκομίσας αὐτόθι χρυσέα τε καὶ ἀργυρέα εἶδη πολύτιμα καὶ πολλά, καὶ ἐν χρυσεῖσι στατήρσιν 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].



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

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<sup>103</sup>. 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

102 Bakirtzēs, Agiou Dēmētriou Thaumata 1:5 §57: «καὶ ὡς ἐκέλευσε κληθῆναι τὸν ἀργυροῦργον, ἐπὶ τὸ ἐντελεσθαι 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 κύριος 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 ἀργύρου 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<sup>104</sup>. 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<sup>105</sup>. Still in the same church, the iron chains that were used to hang silver krater-like lamps in the interior were probably local products<sup>106</sup>. 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<sup>107</sup>. 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<sup>108</sup> (fig. 9), the Missorium of Theodosius I<sup>109</sup>, the so-called Achilles Paten of Pausilypos<sup>110</sup>, and the silver reliquary from Nea Irakleia in Chalkidiki<sup>111</sup> (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<sup>112</sup>. 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<sup>113</sup> (fig. 12).

104 Bakirtzēs, Agiou Dēmētriou Thaumata 152-154, 380, 1:1§87: »ὄρα τὸ ἱερόσκευον ἐκεῖνο καὶ περικαλλὲς δημιουργήμα κατὰ μέσον τοῦ ναοῦ πρὸς τοῖς λαοῖς πλεuroῖς ἐφιδρυμένον ἐξαγώνω σχήματι, κίσιον ἐξ καὶ τοίχους ἰσαριθμοῖς ἐξ ἀργύρου δοκίμου καὶ διαγεγλυμμένον μεμορφωμένον, καὶ τὴν ὀροφήν ὡσαύτως ἀπὸ τῶν ἐξαγώνων πλεuroῖν κυκλοφορικῶς ἀνίσχουσιν καὶ εἰς μίαν στερογγύλην ὡσαύτε ποδὸς ἀπολήγουσαν σύνδεσιν, σφαιρὰν τε ἀργυρεάν μεγέθους οὐ μικροῦ φέρουσαν ἄνωθεν, ὑφ' ἣν ὡς κρίνου βλαστοὶ θαυμάσιοι περιέχονται, ὧν πάντων ἐπάνω τὸ κατὰ τοῦ θανάτου πεπηγὸς τρόποιον ἀκτινοβολεῖ, τῷ μὲν ἀργυρέῳ δημιουργήματι τὰς τοῦ χύματος ὕψεις 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: »ὄρωμενον ἀργύρεον κατὰ τὸ μέσον ἰδρυμένον ὡσπερ σκιμπόδιον, οὐ 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 φασὶ τινες κείσθαι ὑπὸ γῆν τὸ πανάγιον αὐτοῦ λείψανον. Ἐκέισε τοίνυν παραγεγονῶς ὁ ἔπαρχος οἰκείους ποσὶ, καὶ εἰσελθὼν καὶ ἀπερείσας τὸ πρόσωπον εἰς τὸ δὴ αὐτῷ ὡσαύτε κραββάτιον ἐξ ἀργύρου, ἔνθα καὶ ἐντετύπεται 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 Bakirtzēs, *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, λελαμπυρμένον, ἐμπρησθῆναι νυκτὸς ὡς διαλυθῆναι πάντα τὸν ἀργυρον, καὶ τι μέρος αὐτοῦ μειωθῆναι. Ὁ γοῦν εἰρημένος ὁσιώτατος ἀρχιεπίσκοπος, σπεύδων ἐκ καινῆς κατασκευάσει τὸ προλεχθὲν ἅγιον κιβώριον, καὶ μὴ εὐρίσκων ἀναλογοῦσαν τὴν ὀκλήν τοῦ χωνευθέντος ἀργύρου πρὸς τὴν τοῦ παντός ἔργου συμπληρωσιν, 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 hanging 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 ἀλύσεως σιδηρᾶς, ἐξ ἧς πολυφωτὸς τις ἀπρωρεῖτο 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 engraved inscription Οὐ[για] Δ' γρ[άμματα] ΙΔ', referring to its weight (i.e. four ounces and fourteen grams, c. 127 g), see Kourkoutidou-Nikolaïdou, *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 mnēmēia* 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 Παυσίλυπος Θεσσαλονίκης λ(ίτρας) ιε referring 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 Michaëlidēs, *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 Bakirtzēs, *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 YPPO, *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 ΦΙΛΩΔΕΣΠΟΤΟΥ 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 τὸ 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 ΚΩΤΗΡΟC, 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 Koukoulos, *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<sup>114</sup>. The presence of *fabricenses*, military personnel working in *fabricae*, in the city is indicated by an inscription on an early fourth-century sarcophagus<sup>115</sup>. 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<sup>116</sup>. 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<sup>117</sup>. Furthermore,

114 *Notitia Dignitatum*, Or. XI, 35-9: »*Fabricae: ...Illyrici quatuor: Thessalonicensis, Naissatensis, Ratiariensis, 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 στρατη[?]ώτης αναφερόμενος εν τη ειερῶ φάβρικῃ«, a soldier whose exact name is not handed down (only the ending »ανος« 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 Sourès, *Rōmaiko 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.



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<sup>118</sup>.

## Stoneworking

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

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 drastēiotēta* 373-381, with further bibliography.



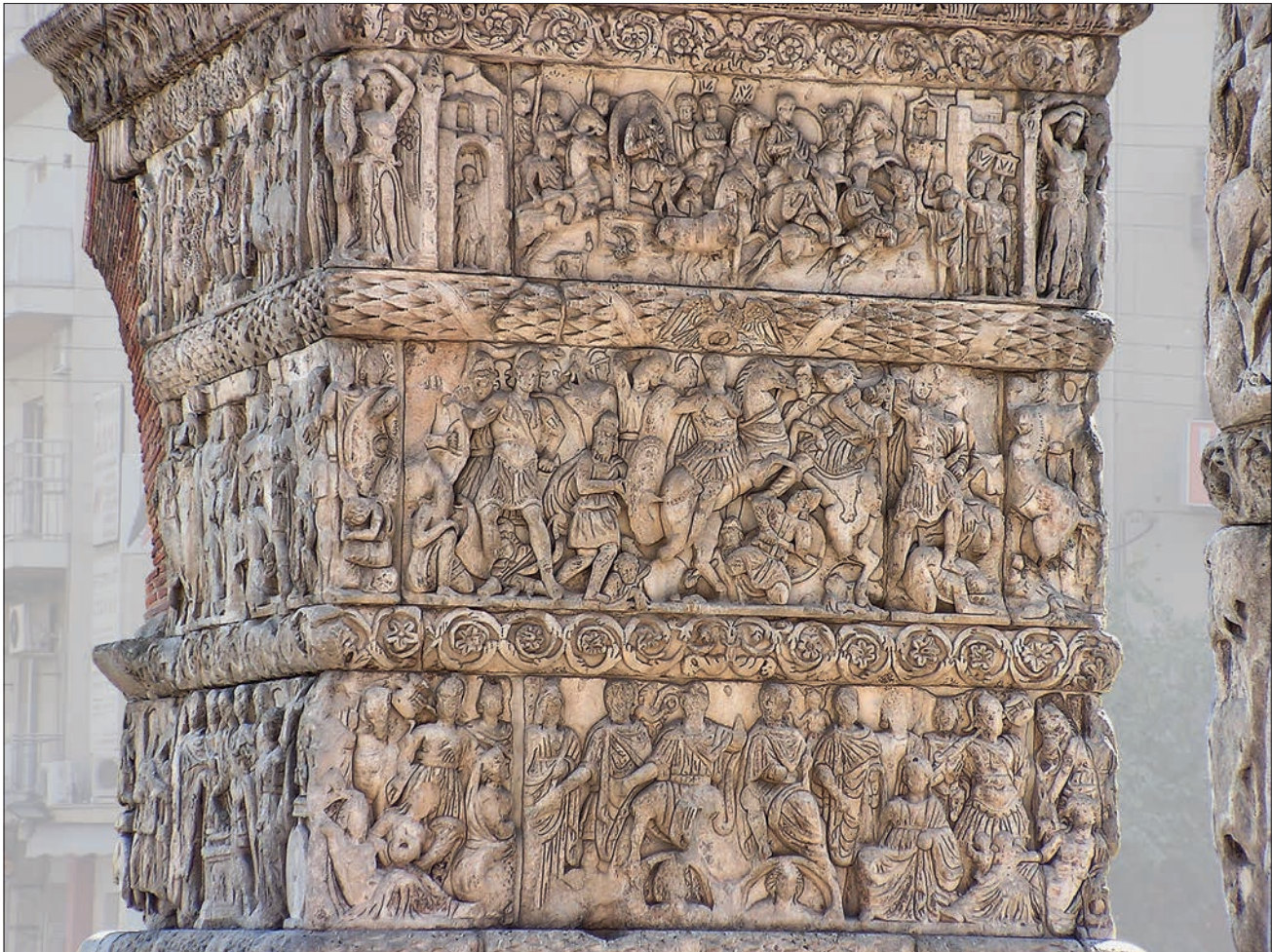


Fig. 13 Galerius' Triumphal Arch, relief of the Persian Campaign.

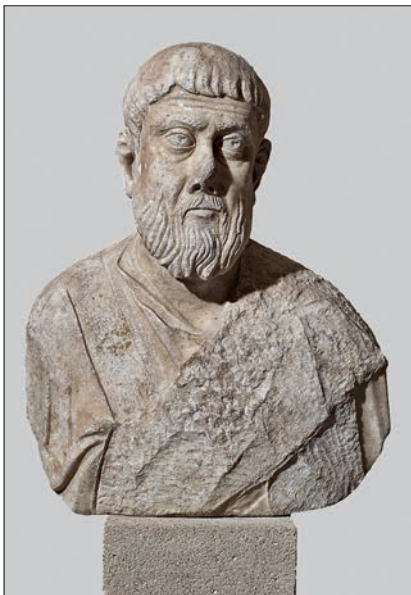


Fig. 14 Marble bust of an apostle or saint, Thessaloniki, Ancient Agora, south stoa (*cryptoporticus*), early fifth century.

lished in the region: rectangular reliefs, monolithic altars and sarcophagi<sup>120</sup>. 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<sup>121</sup>.

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. – Stephanidou-Tiveriou, *The Local Sarcophagi* 239-302. – Stephanidou-Tiveriou, *Agalmata mousōn* 73-122. – Stephanidou-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<sup>122</sup> (fig. 14). It has been argued that some of the rich and diverse sculptural decoration of the Early Christian monuments was executed locally<sup>123</sup>. 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 sev-

enth century<sup>124</sup> (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<sup>125</sup> (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<sup>126</sup>. We might also consider simple creations, such as marble boxes for *enkainion* reliquaries, to have been produced locally<sup>127</sup> (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 Despoines/Stephanidou-Tiveriou/Voutyras, *Katalogos*, vol. 2, no. 308 (G. Despoines). – *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 Maupoulou-Tsioumē/Pa-

panikola-Bakirtzē, *Kionokrana*, vol. 1, 11-38. – Maupoulou-Tsioumē/Papanikola-Bakirtzē, *Kionokrana*, vol. 2, 218-236. – Mentzos, *Korinthiaka kionokrana passim*. On a sixth-century dossier 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 prospata anakalyphentes naoi* 713. – *Cat. Athens* 2002, 66 no. 8 (D. Makropoulou).

127 For a simple square marble casket from the *enkainion* of the fourth-century basilica at Tritēs Septemvriou Street see Kourkoutidou-Nikolaïdou, *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 Dēmētrioi Street, second half of the fifth century to first half of the sixth century.

locally throughout the Roman and Early Christian period<sup>128</sup>. 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<sup>129</sup>. 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<sup>130</sup>.

## 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<sup>131</sup>. Thousands of square metres of wall mosaics have been preserved in the Rotonda<sup>132</sup>, the Acheiropoiētos<sup>133</sup>, the Hagios Dēmētrios<sup>134</sup>, and the Latomou Monastery<sup>135</sup>, as well as in



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

other buildings<sup>136</sup>. 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<sup>137</sup>.

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, *Epitym-vies 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. – Bakirtzīs/Mastora, *Mosaics in the Rotunda* 33-45. – Mastora, *Psēphidōtos diakosmos* 83-107, with all prior bibliography.  
 133 Xyngopoulos, *Peri tēn Acheiropoiētōn* 472-487. – Bakirtzīs, *Sur le donateur* 37-44. – Kourkoutidou-Nikolaidou, *Acheiropoiētōs*. – Kourkoutidou-Nikolaidou/Tourta, *Peripatoi* 185-195. – Kourkoutidou-Nikolaidou/Mauropoulou-Tsioumē/Bakirtzēs, *Psēphidōta Thessalonikēs* 196-237. – Fourlas, *Die Mosaiken der Acheiropoiētos-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 Dēmētrioi*. – 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 Aioulou Street: *Cat. Thessaloniki* 2004, 8. – Another example, imitating a multicoloured gemmed chain/band, was found in an Early Christian urban villa excavated at Praskakē and Koukoughlē 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<sup>138</sup>. 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<sup>139</sup>.

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<sup>140</sup>. 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 dining 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 Klēmēntinē, in a *tabula ansata* frame<sup>141</sup> (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<sup>142</sup>. 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 Tsimidou-Avlōnitou/Galinikē/Anagnōstopoulos, *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<sup>143</sup> (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<sup>144</sup>.

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<sup>145</sup>. 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<sup>146</sup>. 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<sup>147</sup>. 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<sup>148</sup>.

Few of the mural paintings that once decorated churches<sup>149</sup> 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<sup>150</sup>. The colours used were red, black, green, white and yellow<sup>151</sup>. 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<sup>152</sup>.

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 Acheiropoiētōs Basilica, see Kourkoutidou-Nikolaïdou/Tsioumē, Acheiropoiētōs 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 artists, 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, Diachronikōtēta 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 Makeidonikēs 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 elements, 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-Nikolaïdou, 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, Mesaionika pl. 311. – For the house at 6 L. Iasonidou Street, see Markē/Kommatas, Iasonidou 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 (μονομαχία), 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<sup>153</sup>. 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<sup>154</sup>. 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<sup>155</sup>. The use of different types of textiles for clothes and other domestic uses has been traced archaeologically<sup>156</sup> and found in written sources, which also make reference to textiles used for the decoration of houses and even the defence of the city<sup>157</sup>. Furthermore, a sixth-century funerary inscription of a *himatioprates* (ἡμιτιοπράτης), a draper, presents additional firm evidence for this activity in the city<sup>158</sup>.

Textile dyers and, more specifically, purple dyers were active in Thessaloniki from the first century BC onwards<sup>159</sup>. An association of *porphyrovaphoi* (πορφυροβάφοι), purple dyers, was active in Roman times, called *tēs oktōkaidekatēs* (τῆς ὀκτωκαίδεκάτης), »the one of the eighteenth [Street]«, indicating their location and distinguishing them from other relevant associations in the city<sup>160</sup>. 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 mar-

ble sarcophagus from the eastern necropolis (dated to the fourth century)<sup>161</sup>.

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<sup>162</sup>, as was also detected in the upper part of the city, west of Hagios Dēmētrios<sup>163</sup>.

## 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<sup>164</sup>. 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 Archaïologikou 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 16<sup>th</sup> Ephorate of Prehistorical and Classical Antiquities.

157 Bakirtzēs, *Agiou Dēmētriou Thaumata* 1:14 §152: »ἐβουλεύσαντο πρὸς τῶν ἐπάλξεων ἀρτήσαι ἐκ ῥάβδων λεπτῶν ὡσπερ τινὰ καθυφασμένα καταπετάσματα, καὶ τὰς ἐν τοῖς δειπνητηρίοις ὑπὸ τοῦς δαιτυμόνας τιθεμένας ἐκ παπύρου καὶ σάκκου στρωμνῆς« [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 laographika* 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 Archaïologikou Mouseiou* 88 fig. on p. 89, published in Tzanavari, *An Example* 25-34. – Moulhērat/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 dye-works and tanneries<sup>165</sup>. 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<sup>166</sup>.

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<sup>167</sup>. 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<sup>168</sup>.

## 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. Exceptional 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<sup>169</sup>. 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 smoothed knucklebones and game counters<sup>170</sup>.

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<sup>171</sup>. Two blocks to the south-west, at the junction 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<sup>172</sup>.

## Woodworking

The earliest indication for an artisan involved in woodworking, a *zygopoios* (ζυγοποιός), i. e. a yoke maker, Artemōn, is dated to 159/160<sup>173</sup>. After a long period of silence, the next surviving piece of textual evidence comes from a funerary inscription mentioning the *Leptourgos Heliodoros* (Λεπτουργός Ἡλιόδωρος), who died in the city sometime in the fifth century<sup>174</sup> (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 Footwear* 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, *Archaioitētes 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, *Evraikē 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. Moutsianos),

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-Velene.

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 Ἡρώνος 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 Sōtērīchos 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<sup>175</sup>. A wine reservoir was unearthed in the excavation of a fifth-century country villa at Palaiokastros, west of Thessaloniki<sup>176</sup>. 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<sup>177</sup>.



**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.