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Byzantine Bricks and Brickstamps of Thessaloniki

Konstantinos T. Raptis

Fig. 1
View of the Eastern Walls of Thessaloniki (ca. 450 C.E.).

Blick über die östliche Stadtmauer von Thessaloniki, (um 450 n.Chr).

Fig. 2
Thessaloniki, Rotunda (4th / 6th c.); view to the north.

Thessaloniki, *Rotunda (4. / 6. Jh.); Blick gegen Norden.*

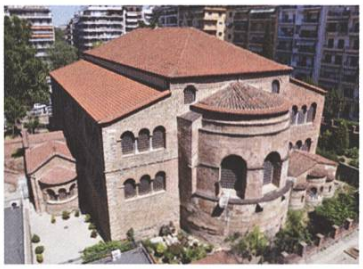


Fig. 3
Acheiropoietos Basilica (ca. 500); view to the northwest.

Acheiropoietos Basilika (um 500); Blick nach Nordwesten.

The present paper examines the Byzantine bricks produced and used in public, both ecclesiastical and secular, architecture in Thesssaloniki, focusing on the embossed brickstamps, documented – with a few exceptions – on Early Byzantine bricks produced in the state workshops of this significant Byzantine urban center. Additionally, it documents the pattern of their extended use in the Early Byzantine monuments of the city, as well as their reuse in Medieval and Post-Medieval, both secular and ecclesiastical, structures, offering some remarks and questions regarding their – occasionally ignored – reconsumption for purpose different than their original one.

Brick formats

The bricks of the Early Byzantine monuments of Thessaloniki – as those of the Walls (fig. 1, 4, 20), the Christian phase of the Rotunda (fig. 2, 5), and the foundation phases of the Acheiropoietos (fig. 3) and St Demetrius basilicas –, produced and used from the early fourth until the end of the sixth centuries, seem to have standard dimensions: 30,8 x 41 x 4,5–5 cm or 31,2 x 40 x 5–5,5 cm. Based on their standardized width, it is assumed that they were designed and produced based on the Roman or the Early Byzantine foot (fig. 6–11).

However, even though the standard dimensions of the bricks, i.e., their length and width, did not change significantly during the following centuries – remaining ca. 30–32 x 40–41 cm –, their thickness varies throughout the Byzantine Middle Ages. The bricks produced for the seventh century restoration of Early Byzantine monuments or for the construction of new oeuvres of public architecture in Thessaloniki during the seventh century, are quasi analogous to those of the previous period.

The bricks produced and used for the construction of early Middle Byzantine structures – mid-ninth to tenth centuries – are usually thicker, up to 6 cm. Even though in some cases, as in decorative conches, the use of narrower bricks, ca 3,5–4 cm wide, have been also documented in ninth century structures. The bricks

Byzantinische Backsteine und Backsteinstempel von Thessaloniki

Konstantinos T. Raptis, gekürzte deutsche Fassung von Jürg Goll

Der Beitrag von K. Raptis dokumentiert die frühbyzantinischen Backsteine von Thessaloniki, die in leistungsfähigen, staatlichen Ziegeleien für öffentliche Bauten kirchlicher und säkularer Nutzung hergestellt wurden. Besondere Beachtung gilt den Stempeln, die mit wenigen Ausnahmen auf frühbyzantinischen Backsteinen vorkommen und primär logistischen Zwecken dienten. Im 7. Jahrhundert ging die Backsteinproduktion wegen der äusseren Bedrohung merklich zurück. Beim Wiederaufbau nach der Erdbebenserie im 7. Jahrhundert und einem weiteren Erdbeben vor 820 wurden die alten Backsteine gesammelt und wiederverwendet. Den gestempelten Backsteinen mit christlichen Symbolen kam eine neue, apotropäische Bedeutung zu; sie wurden gezielt an gut sichtbaren Schlüsselstellen angebracht. Dieser Brauch hielt sich bis in postbyzantinisch/osmanische Zeit.

Die vorliegende deutsche Fassung stellt eine überarbeitete und gekürzte Version des englischen Originals dar. Für Anmerkungen und Literaturzitate konsultiere man die englische Originalvariante.

Fig. 4

Thessaloniki, Hormisdas Tower in the eastern city wall, attributed to the Praetorian prefect shortly before 450 C.E. Detail of the building inscription with bricks: «Hormisdas walled this city with indestructible walls.»

Thessaloniki, Hormisdas-Turm in der östlichen Stadtmauer, dem Prätorianerpräfekten kurz vor 450 n.Chr. zugeschrieben. Ausschnitt aus der Bauinschrift mit Backsteinen: «Hormisdas ummauerte diese Stadt mit unzerstörbaren Mauern».

produced for late Middle Byzantine buildings as well as for Late Byzantine public architecture in Thessaloniki – from the twelfth century until the fall of the city to the Ottomans in 1430 – are in their great number thinner, with thickness that does not exceeds 3,5–4 cm. Additionally, from the late twelfth century onwards also half width and thin bricks with dimensions ca. 27–30 x 13–15 x 2,5–3 cm, have been documented.

Raw material and molds

The Byzantine bricks from Thessaloniki were made of red, insufficiently worked, clay of local origin, with coarse grained aggregates, visible in the material of the fired product. They were produced by the means of a wooden frame, which formed their narrow sides defining their dimensions.[1] However, it seems that at least until the sixth century C.E., the wooden frame had on the one side a flat surface made of two narrower wooden slats joined together, forming a proper mold,[2] in order to facilitate also the production of stamped bricks, bearing embossed letters and symbols for the overall control of their circulation (fig. 6–17).

Fig. 5 ▶

Thessaloniki, Rotunda. The foundation of the centrally planned building with the massive brick-built dome (Ø 24,5 m) is attributed to either Galerius (Augustus of the East, 305–311) or Constantine I (Augustus of the West, 306–324, Sole Emperor 324–337). The building was converted into a Christian Church and decorated with mosaics during the Early Byzantine period (late 4th to 6th c.).

Thessaloniki, Rotunda. Der Zentralbau mit der massiven Backsteinkuppel (Ø 24,5 m) wird entweder Galerius (Augustus des Ostens, 305–311) oder Konstantin I. (Augustus des Westens, 306–324, Alleinherrscher 324–337) zugeschrieben. Das Gebäude wurde in der frühbyzantinischen Periode (spätes 4. bis 6. Jh.) in eine christliche Kirche umgewandelt und mit Mosaiken verziert.

Brickstamps

Byzantine brickstamps[3] were produced in brick and tile producing workshops, run or controlled by the Byzantine State through the army and the ecclesiastical hierarchy,[4] mainly in Constantinople,[5] and in certain imperial cities of the Byzantine periphery, as Rome,[6] Thessaloniki,[7] Nicopolis[8] and elsewhere[9]. Each one of these prominent urban centres had its own production of ceramic building materials of high quality, produced, and used almost exclusively in public architecture of mainly the fifth and sixth centuries. Each city had its own system of different brickstamps, embossed only on a small percentage of the production, as trademarks, to ascertain their circulation, to control the quantities of each order, and to certify the quality of the production. In these public structures the brickstamps were usually invisible since their purpose was fulfilled after their delivery at the construction site.[10]

Brickstamps have been documented in bricks from Early Byzantine monuments of Thessaloniki as early as the late nineteenth century. The first drawings of brickstamps from Thessaloniki, have been published by Ch. Texier and R. Popplewell Pullan[11], although some brickstamps from the city's Byzantine structures had been drawn by the French consul J. B. Germain as early as 1746.[12] In the early decades of the twentieth century, similar

Backsteinformate

Die Backsteine der frühbyzantinischen Monumente von Thessaloniki, wie diejenigen der Stadtmauern (fig. 1, 4, 20), der christlichen Phasen der Rotunda (fig. 2, 5) sowie der Gründungsphasen der Basiliken Acheiropoietos (fig. 3) und St. Demetrios (fig. 18) aus dem frühen 4. bis zum Ende des 6. Jahrhunderts, hatten standardisierte Formate von 30,8 x 41 x 4.5–5 cm beziehungsweise 31,2 x 40 x 5–5,5 cm, die offenbar auf dem römischen oder frühbyzantinischen Fuss basieren (fig. 6–11). Im Gegensatz zu den Längen und Breiten variierte die Dicke während des gesamten byzantinischen Mittelalters.

Die Backsteine der frühen mittelbyzantinischen Bauten, das heisst Mitte 9. bis 10. Jahrhundert, waren gewöhnlich etwas dicker – bis etwa 6 cm. In Ausnahmefällen, zum Beispiel in dekorativen Nischen, wurden dünnere Quader von zirka 3,5–4 cm Stärke verbaut.

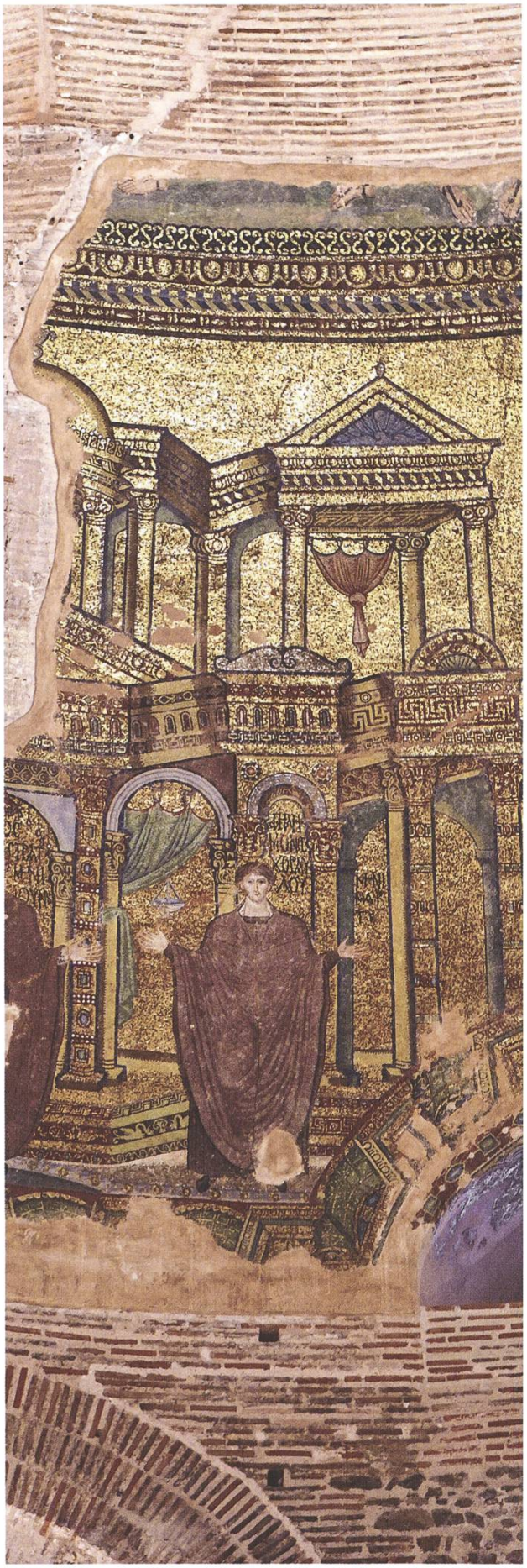
Ab dem 12. Jahrhundert, bis die Stadt 1430 an die Osmanen fiel, wurden mehrheitlich dünnere Backsteine produziert, die selten 3,5–4 cm Dicke überschritten. Darüber hinaus kamen halbbreite und dünne Ziegel mit Abmessungen von zirka 27–30 x 13–15 x 2,5–3 cm vor.

Rohmaterial und Modelformen

Die Backsteine wurden aus rotem, unzureichend verarbeitetem Ton mit grobkörnigen Zuschlägen lokaler Herkunft in hölzernen Rahmen hergestellt. Zumindest im 6. Jahrhundert wurden auch Formkisten verwendet, in deren Boden mit einem scharfen, 4,5 mm breiten Werkzeug Buchstaben und Symbole eingraviert wurden, die sich in die Backsteine einprägten (fig. 6–17). Die gestempelte Fläche ist bei den meisten Beispielen durch eine dünne Linie zweigeteilt (fig. 6–7, 9–11, 14–16), weil der Boden der Formkiste jeweils aus zwei aneinandergefügten Brettchen bestand, wo der Lehm in den Spalt eindringen konnte und einen leicht erhabenen Steg hinterliess.

Backsteinstempel

Backsteinstempel wurden in Werkstätten benutzt, die vom byzantinischen Staat durch die Armee und die kirchliche Hierarchie betrieben oder kontrolliert



brickstamp drawings were published by O. Tafrali,[13] followed by the reports by Ch. Diehl for the Acheiropoietos basilica,[14] G. Sotiriou for St Demetrius basilica,[15] E. Hébrard for the Rotunda[16], and M. Kalligas for the Hagia Sophia Byzantine cathedral[17].

Even though, as it is already mentioned, the Early Byzantine bricks from Thessaloniki have standard dimensions, based on the Roman or the Early Byzantine foot (30,8 and 31,2 cm), in most cases the brickstamps are documented on bricks of the second category made based on a foot 31,2 cm wide.[18]
The surface of their main side, which bears the stamp, is divided in most examples into two parts by a thin line (fig. 6–7, 9–11, 14–16), which was most probably due to the two wooden parts with which the mold was constructed. Based on the elements, drawn from the bricks themselves, the molds, probably wooden, were made of two smaller slats, the joint of which created a small gap, which was filled by the malleable clay, creating an elaborate linear rib after it was fixed.[19] The side walls of the mold were made of small pieces. The joints of these pieces with the main wooden surface of the mold, which bore the stamp, are visible on the sharp edges of most bricks. The printed stamps had been made, by engraving their negative on the wooden mold with a sharp tool, about 4,5 mm thick (fig. 6–17). In some examples, the negative of all or part of the brickstamp appears on the surface of the brick, as the reversal of its pattern in the mold was not preceded by its constructor.[20]

ENT-monogram

The main and most discussed brickstamp type in the bibliography, documented on bricks used for the first time in the Early Byzantine phases of the fortification walls (fig. 1, 4), dated in the middle of the fifth century as well as in most of the ecclesiastical Early Byzantine monuments of Thessaloniki[21] (fig. 2, 3, 5), consists of variants of a monogram, which is analyzed in the Greek letters EN or ENT, between two crosses and in most of the cases with one more letter of the Greek alphabet, namely the letters A, B, E, Z, I, K and T (fig. 11, 18a).[22] However, apart from the arrangement of the individual elements, these brickstamps present differences in the form of the monogram as well, due to the way its negative is engraved on the wooden mold of the brick.[23]

In the most usual variant of this group, found at the Acheiropoietos basilica (fig. 3), the second – Christian – phase of the Rotunda (fig. 2, 5), the basilica of St. Demetrius, and the so-called Theodosian

Fig. 6

Bricks and brickstamps with «+ ENT+» monograms and crosses from a late 5th / early 6th c. secular building to the north of the episcopal basilica.

Backsteine und Backsteinstempel mit «+ ENT +» Monogrammen und Kreuzen von einem Profanbau aus dem 5./6. Jh. nördlich der Bischofskirche.

wurden, vor allem in Konstantinopel und in einigen Reichsstädten der byzantinischen Peripherie, wie Rom, Thessaloniki, Nikopolis und anderswo. Jedes dieser städtischen Zentren verfügte über eine eigene Produktion keramischer Baumaterialien von hoher Qualität, die fast ausschliesslich in der öffentlichen Architektur vor allem des 5. und 6. Jahrhunderts verwendet wurden. Jede Stadt verfügte über ein eigenes System verschiedener Backsteinstempel, die nur auf einem kleinen Prozentsatz der Produktion als Markenzeichen eingeprägt wurden, um den Umlauf zu kontrollieren, die Liefermengen zu steuern und die Qualität der Produktion zu bestätigen. Die Backsteinstempel selbst waren in der Regel nicht sichtbar, weil deren Zweck nach der Lieferung auf die Baustelle erfüllt war. Sie weckten das Forschungsinteresse seit der Mitte des 19. Jahrhunderts und wurden entsprechend dokumentiert.

ENT-Monogramm

Der wichtigste und in der Literatur am meisten diskutierte Stempeltyp besteht aus Varianten eines Monogramms, das als Ligatur der griechischen Buchstaben EN *oder* ENT *zwischen zwei Kreuzen gelesen wird und in den meisten Fällen mit einem weiteren Buchstaben des griechischen Alphabets, nämlich mit den Buchstaben* A, B, E, Z, I, K *oder* T *versehen ist (fig. 11, 18a). Er taucht erstmals auf Backsteinen der frühbyzantinischen Festungsmauern in der Mitte des 5. Jahrhunderts auf und ist in den meisten frühbyzantinischen Kirchen von Thessaloniki zu finden. Die Interpretation des Monogramms* EN *oder* ENT *ist umstritten. G. Soteriou*

walls of the city (fig. 1, 4), the brickstamp consists of the monogram ENT, between two small crosses in combination with a single letter – A (fig. 6-8, 11e and 18a), B, I, K (fig. 10) and T.[24] In a second variant of this type, the brickstamp consists of the ENT monogram, with two small crosses on either side of it, accompanied by the letter I, while the letter Θ, is located independently of the monogram on the same surface of the brick (fig. 9, 11g-i). In some examples, the ENT monogram is stamped between two crosses, without being accompanied by a letter (fig. 11a-d), while the letter Θ is placed independently in the second half of the bricks' surface.[25] In a third variant of this group the brickstamp consists of the monogram EN or ENT, framed by two crosses in combination with a S-shaped symbol (fig. 11f).[26]

However, variations of the monogram EN or ENT, between two crosses, without being accompanied by other letters of symbols have been also documented (fig. 11a-d).[27] This type of brickstamp, which has been found on bricks built in all the Early Byzantine monuments of Thessaloniki,[28] presents a special variety due to differences in the construction of its numerous similar molds, a fact that probably testifies to its wide and possibly long-term use.[29] It has been located at the northern peristyle of the Late Antique palatial complex,[30] the northern wall of the Acropolis,[31] the eastern wall of the lower city, near the Hippodrome[32], in the western wall, close to the Golden Gate[33], as well as in second use in Ottoman repairs of the Acheiropoietos basilica[34], and in masonries of the Byzantine cathedral of Hagia Sophia[35].

All the variants of the monogram, presented, have been attributed by G. Soteriou and M. Vickers to the abbreviated word ENT[ΙΚΤΙΩΝ], i.e. ΕΝΔΙΚΤΙΩΝ,[36] that means *indictio* and the combination of the monogram with Greek letters used also as numbers in the ancient Greek arithmetic system, led to the performance of the respective brickstamps as the mean of controlling and identifying the brick production for public architectural programs, and mainly the city walls, in specific years of an *Indictio*, the first year of which – that corresponds to the «+ ENT + A» brickstamp – was identified with the year 447–448;[37] an interpretation that has been proved problematic, if not wrong.[38] It has to be noted that, even though, *indictio* years appear on the Constantinopolitan bricks, they are indicated by the syllable I N, in some cases accompanied by the abbreviation S̲ or a bar, and not in the form of a monogram.[39] More recently, on the basis of the resemblance of the ENT monogram of the Thessalonian brickstamps with personal

Fig. 7

«+ ENT + A» brickstamp from the Acheiropoietos basilica.

«+ ENT + A» *Backsteinstempel von der Acheiropoietos Basilica.*

und M. Vickers sahen darin eine Indiktionsangabe – ein Datierungssystem – ENT[ΙΚΤΙΩΝ]. *Andere hielte es für Monogramme von Eigennamen, von Kaisern bis zu Ziegeleiaufsehern. Jedenfalls kommen sie praktisch nur im Mauerwerk von öffentlichen Gebäuden vor, wie zum Beispiel in den Stadtmauern, im Palastkomplex sowie in den wichtigen Kirchen der Erzdiözese Thessaloniki, und dürften dokumentieren, wie die Armee oder der Bischof ein staatliches Netzwerk von Werkstätten zur Herstellung von Baumaterial für öffentliche Gebäude kontrollierten. Es ist bezeichnend, dass ähnliche Ziegel aus Privatbauten wohl nur in Zweitverwendung vorkommen. Die unzähligen Kombinationen und vor allem die Stempelvarianten des Monogramms zeugen wahrscheinlich von einer breiten und langfristigen Verwendung. Wegen dieser weiten zeitlichen und räumlichen Streuung und der vielen wiederverwendeten Stücke ist eine präzisere Datierung als 5. bis Mitte 6. Jahrhundert problematisch.*

Weitere Stempelmarken

Desweitern gibt es Backsteine mit verschiedenen unabhängigen Symbolen, meist Kreuze oder Einzelbuchstaben (fig. 12–16, 18b). Der häufige Buchstabe Θ *(fig. 9, 11g-i) könnte sowohl für ein Zahlzeichen als auch für den Stadtnamen* ΘΕΣΣΑΛΟΝΙΚΗ *(Thessaloniki) stehen. Seltener sind Stempel aus einer Kombination von zwei oder mehr Buchstaben, wie zum Beispiel* ΘΕ *oder* ΖΑ *aus der primären Phase der inneren Festungsmauer, die als Namenskürzel identifiziert werden konnten. Die Buchstabenkombinationen* ΚΛΑ *und* ΚΛΜ *oder* ΑΛΚ *und* ΜΛΚ *dürften sich auf bestimmte Werkstätten oder einzelne Hersteller beziehen. An Symbolen findet man unter anderen lateinische Kreuze (fig. 12, 15a, 18b), Kreuze auf einem Kreis (fig. 13, 15d, 18b), die man früher als Symbol der Kirche gedeutet hat, und Kreuze, die in Kreis oder Quadrat eingeschrieben sind (13, 15b-c, 18b).*

Fig. 8.

«+ ENT + A» brickstamp from the south annexes of the Christian phase of the Rotunda.

«+ ENT + A» *Backsteinstempel vom Südannex der christlichen Phase der Rotunda.*

Fig. 9

«+ ENT + I» and «Θ» brickstamp from the Acheiropoietos basilica.

«+ ENT + I» *und* «Θ» *Backsteinstempel von der Acheiropoietos Basilika.*

Fig. 10

«+ ENT + K (?)» brickstamp from the western walls, near the Letaia gate.

«+ ENT + K (?)» *Backsteinstempel von der westlichen Stadmauer beim Letaia-Tor.*

monograms of the late fifth century, which are dominated by a central N, denoting a name, it has been proposed that the ENT monogram on the Early Byzantine bricks from Thessaloniki might be deciphered as ΛENT, standing for the name ΛΕΟΝΤΟΣ or ΛΕΟΝΤΙΟΥ; thus referring possibly to a number of individuals, such as the fifth century emperor Leo I (457–474) or II (473–474), the Prefect of the Illyricum Leontios (ca. 435/441), a lower officer of the Byzantine state, or even an homonymous supervisor of the respective brickyard.[40]

More brickstamps

Bricks with various independent symbols – usually crosses – or individual letters have been also listed (fig. 12–16 and 18b).[41]

In the same monuments have been documented bricks bearing the letter Θ (fig. 9, 11g-i) that can be attributed to either a number or the name of the city ΘΕΣΣΑΛΟΝΙΚΗ (Thessaloniki),[42] bricks with a Latin cross (fig. 12, 15a and 18b) or a Latin cross on a circle (fig. 13, 15d and 18b) that has been interpreted as a symbol of the church[43], or bricks with a cross inscribed in a circle or a square (fig. 13, 15b-c and 18b).[44]

Small parts of bricks bearing the letter T (fig. 16a-b) have been found in the Acheiropoietos basilica,[45] the city walls,[46] and the Hagia Sophia.[47] On bricks from the Acheiropoietos basilica the letter Ψ (fig. 16f) as well as the letter N or Z (fig. 16g), have been recorded.[48] Similar bricks with the individual letters A, B, E (fig. 14), Δ, Z, I, K and N have been found in structures of the palatial complex and the walls, in Byzantine cisterns[49] as well as in second use on the floor of the galleries of the Hagia Sophia Byzantine cathedral.[50]

On the brick built bed of a marble paved stairway leading to an unknown Early Byzantine, probably ecclesiastical building bricks bearing the embossed letters E, Є and the combination of the letters Є b have been documented. In the same building a brickstamp consisted of an engraved star in combination of an individual letter (A) has been also recorded.[51]

The letters O and P, which are probably part of a larger brickstamp have been documented on fragmentary maintained bricks reused during Byzantine and Ottoman repairs of the Acheiropoietos basilica (fig. 16e).[52]

Rarer are the brickstamps consisting of combination of two or more letters, such as ΘE or ZA, found in the primary phase of the inner wall of the fortification, which could be identified as name abbreviations, or K Λ A[53] and K Λ M – or A Λ K and M Λ K – printed upside down on the surface of the bricks, found on bricks from the

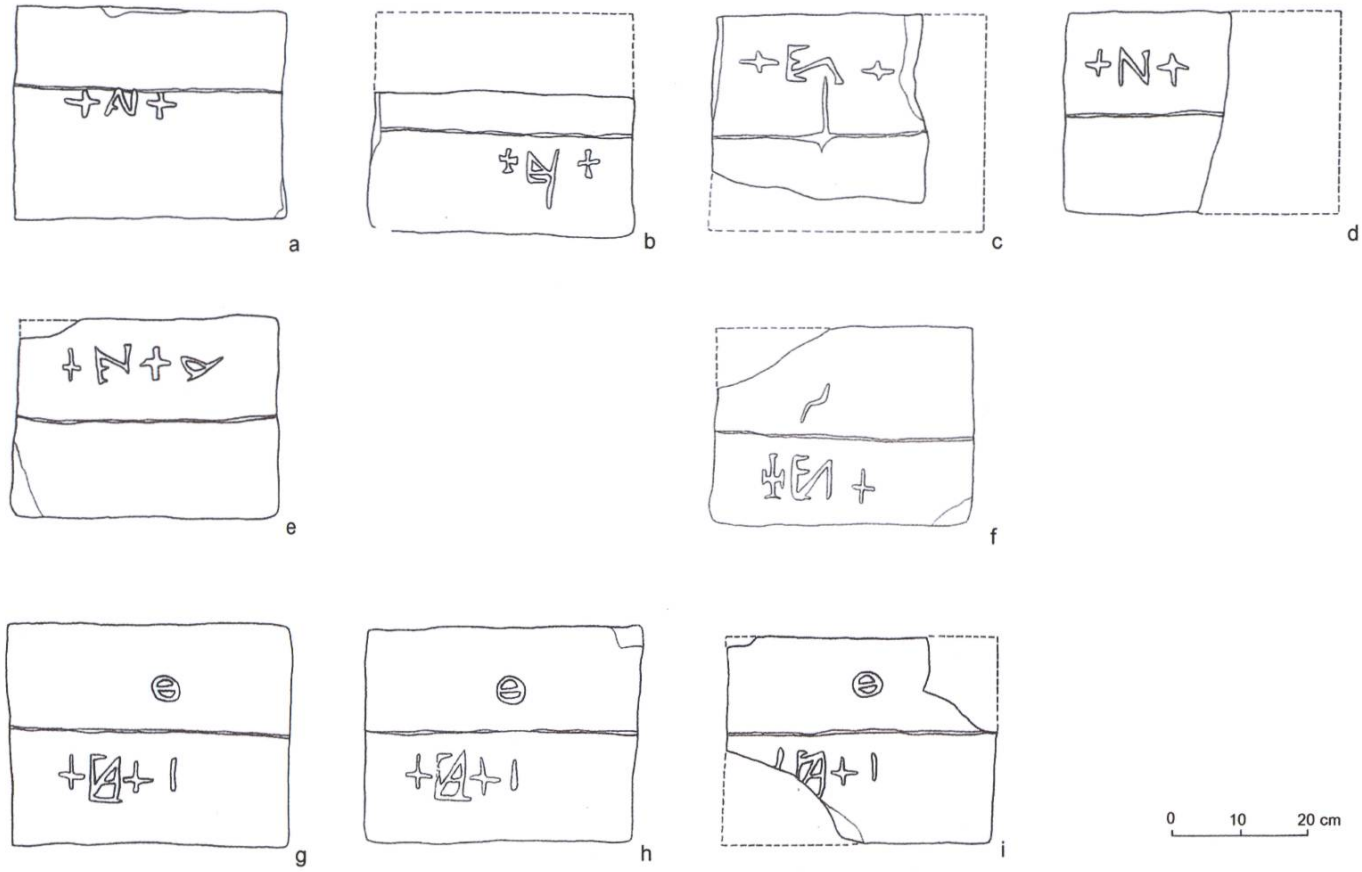


Fig. 11

Various types of «+ ENT +» brickstamps.

Verschiedene Typen von «+ ENT +» Backsteinstempeln.

Fig. 12

Brickstamp with a latin cross from the floor of a Byzantine cistern.

Backsteinstempel mit einem lateinischen Kreuz vom Boden einer byzantinischen Zisterne.

Fig. 13

Brickstamp with a cross inscribed in circle from the floor of a Byzantine cistern.

Backsteinstempel mit einem Kreuz, in Kreis eingeschrieben, vom Boden einer byzantinischen Zisterne.

Fig. 14

Brickstamp with the individual letter E from the floor of a Byzantine cistern.

Backsteinstempel mit einem Einzelbuchstaben E *vom Boden einer byzantinischen Zisterne.*

Acheiropoietos basilica[54] and on bricks from the western walls to the north of the Letaia Gate[55], as well as from the northeastern section of the fortification, near the Klavdianos tower[56]. These brickstamps could refer to certain brick producing workshops or individual manufacturers, while the letters A and M next to the K Λ combination may denote a certain group of workmen or a workshop.[57]

Name brickstamps

Of particular interest is the hitherto unknown type of brickstamp – that was for the first time documented a few months ago – which bears the full name EYCEBIC or EYCEBIOC in the general case, EYCEBIOY, since all the bricks with the same brickstamp documented so far, the suffix of the name is worn or not visible (fig. 17). Given that in the standard brickstamp system of the Early Byzantine brick production from Thessaloniki no other example with a main name has been documented so far – and given that similar bricks from Constantinople bear the name of emperors or officers of the state[58] –, Eusebius, mentioned on these bricks from Thessaloniki, could be identified with the homonymous bishop of Thessaloniki during the last decade of the sixth and the first years of the seventh century.[59]

Additionally, in bricks dated in later periods, used for the first time in monuments of the seventh century, such as the five-aisled basilica of Agios Dimitrios, fragments of bricks with elaborate cross-shaped monograms of Epiphaniou and Theoph[anou] as well as bar monograms of Phok[a] have been found (fig. 18c), related most probably to the production of bricks during the Transitional period, i.e. seventh to eight centuries.[60]
Another type of brickstamp from the Acheiropoietos basilica, documented only once, has been attributed to a later production of the seventh or even the ninth century, a period when brickstamps are really rare. It consists of a monogram which is read as M[H]T[H]P Θ[EO]Y, meaning Mother of God (fig. 19),[61] and is probably related with a certain brick production that was intended for either the seventh or the ninth century restoration of the homonymous basilica dedicated to the Virgin.

Apart from the last example which forms an unicum in the frame of the brick production in Byzantine Thessaloniki, the brickstamps that appear in all the Early Byzantine public buildings of the city, comprise an important topic on the study of the ceramic building materials of this period. As the brickstamps do not appear

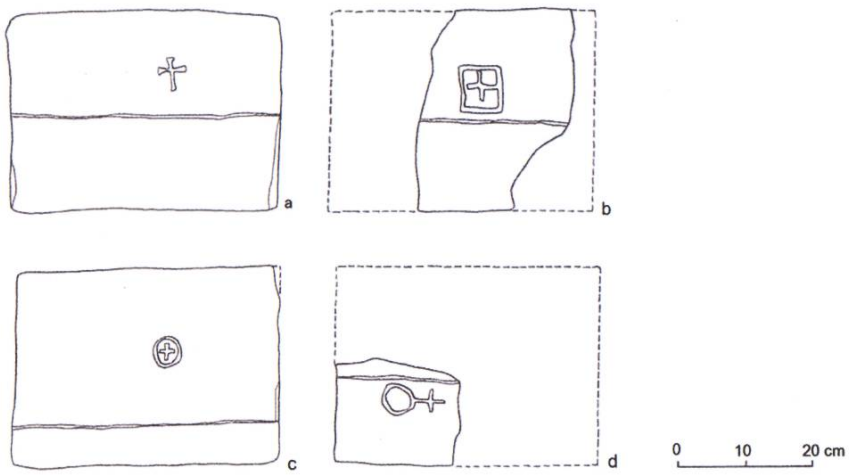


Fig. 15

Brickstamps with various types of crosses.

Backsteinstempel mit verschiedenen Typen von Kreuzen.

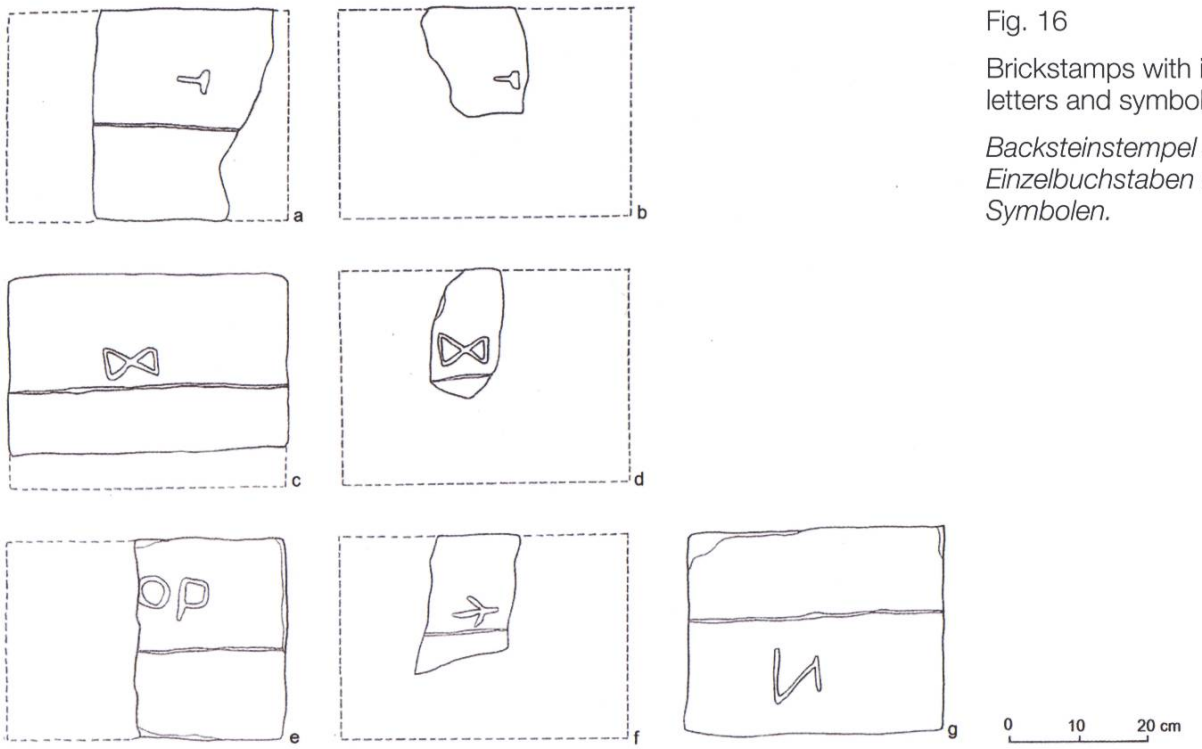


Fig. 16

Brickstamps with individual letters and symbols.

Backsteinstempel mit Einzelbuchstaben und Symbolen.

Namensstempel

Nicht alle Zeichen und Symbole lassen sich entschlüsseln. Einige sind wohl als Namenszeichen zu lesen. Vor wenigen Monaten wurde der bisher unbekannte Stempel EYCEBIOY *dokumentiert, dessen Abdrücke alle aus der gleichen Form stammen und soweit abgenutzt waren, bis der Name verblasste (fig. 17). In Anbetracht der Tatsache, dass im Stempelsystem der frühbyzantinischen Ziegelproduktion von Thessaloniki bisher kein anderes Beispiel mit einem Hauptnamen dokumentiert wurde und dass ähnliche Ziegel aus Konstantinopel den Namen von Kaisern oder Staatsbeamten tragen, könnte Eusebius mit dem gleichnamigen Bischof von Thessaloniki während des letzten Jahrzehnts des 6. und der ersten Jahre des 7. Jahrhunderts identifiziert werden.*

in the whole but in a small percentage of the bricks, they are probably related with the calculation, and the control of the orders of one or more local contractors that supplied bricks for the construction of the major public architectural works of the period. In particular, the ENT brickstamps in combination with crosses, which as a type of seal are systematically found in masonry related to the construction phases of public buildings such as parts of the walls and the palace complex or important churches of the Archdiocese of Thessaloniki, may be the way in which the army or the bishop controlled a state network of construction material production workshops for the construction of public works. It is characteristic that similar bricks found in excavations of private dwellings are few and probably in second use.[62]

The quantity of the different brickstamps, the existence of various molds for each brickstamp type, the simultaneous use of brickstamps which do not identify the same production in a single structural phase of one building, as well as, the fact that the same brickstamps have been documented in several monument, dated from the mid fifth to the mid sixth centuries, indicate a large brick production, which, most probably, is not related to a specific order for the construction of a certain building, and at the same time reveals the use of stored building materials from older production. The aforementioned conclusion, if combined with the widespread reuse of fifth and sixth century stamped bricks in later repairs of the Early Byzantine buildings, or even in later monuments, showcases that the use of the brickstamps as dating data of the monuments wherein they have been used, is more than problematic.

Second life of the bricks

It seems that due to the quality and the durability of their material, the Early Byzantine bricks had a second life through their subsequent use in later structures. In Thessaloniki, after the ruination of the Early Byzantine monuments by the seventh century series of earthquakes, witnessed in the contemporaneous narration of the Miracles of St. Demetrius,[63] that according both literary sources and archaeological data resulted to the ruination of most of the prominent both secular and ecclesiastical structures of the city, including the urban infrastructure, the bricks were collected carefully from the ruined buildings to be reused either in their restoration or in new public structures in the city. The fact that these bricks, and especially the stamped ones are usually documented also in public works of the subsequent period and have been barely discovered in less prominent structures of private

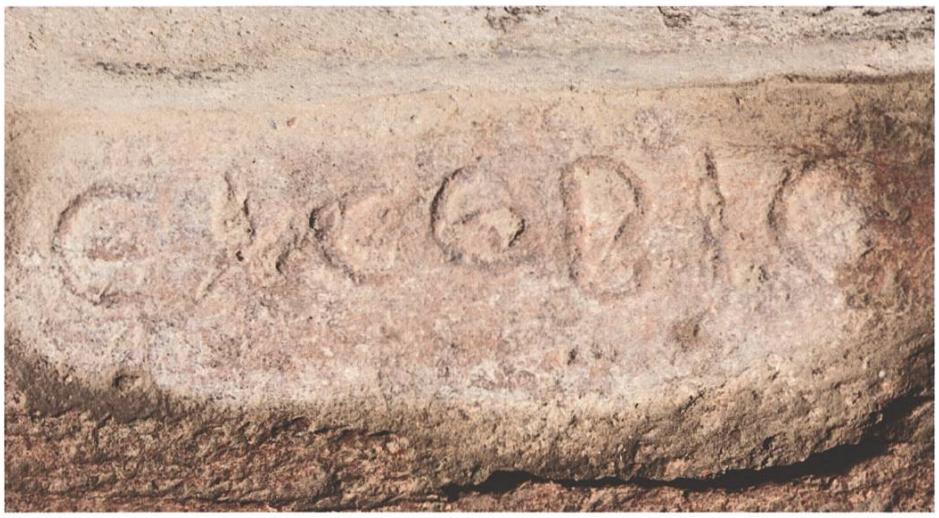


Fig. 17

Brickstamp with the name «EYCEBI[OY]» (Eusebios) from the floor of a Byzantine cistern.

Backstein mit dem Namen «EYCEBI[OY]» (Eusebios) vom Boden einer byzantinischen Zisterne.

Darüber hinaus wurden Backsteinfragmente mit kunstvollen kreuzförmigen Monogrammen von Epiphaniou und Theoph[anou] sowie Balkenmonogrammen von Phok[a] gefunden (fig. 18). Die frühesten stammen aus Monumenten des siebten Jahrhunderts.
Ein Einzelfall aus der Acheiropoietos-Basilika trägt das Monogramm M[H]T[H]P Θ[EO]Y, *was Mutter Gottes bedeutet (fig. 19) und wahrscheinlich für die Restaurierung der gleichnamigen, der Jungfrau Maria geweihten Basilika im neunten Jahrhundert bestimmt war.*

Nachleben

Die frühbyzantinischen Backsteine hatten dank ihrer Dauerhaftigkeit ein zweites Leben und wurden in späteren Bauwerken wiederverwendet. Wie die zeitgenössischen Wundergeschichten des hl. Demetrios, literarische Quellen und archäologische Befunde bezeugen, wurden die frühbyzantinischen Denkmäler in Thessaloniki durch die Erdbebenserie des 7. Jahrhunderts stark zerstört. Daraufhin wurden die Backsteine sorgfältig gesammelt, um sie entweder für die Restaurierung oder für neue öffentliche Bauwerke in der Stadt wieder zu verwenden. Die Tatsache, dass diese Backsteine, insbesondere die gestempelten, fast nur in öffentlichen Bauwerken der Folgezeit dokumentiert sind und in Gebäuden privaten Charakters kaum vorkommen, ist wohl ein Hinweis darauf, dass der Wiederaufbau von der öffentlichen Hand betrieben wurde und das Material als Eigentum des Staates oder, im Falle der kirchlichen Stiftungen, des örtlichen Bistums betrachtet wurden.
Zudem scheint es für die grossen Ziegeleien ab dem Ende des 6. Jahrhunderts ausserhalb der Befestigungsanlagen zu unsicher geworden zu sein, was letztlich zu ihrer Auflassung führte. Allerdings geht aus der Untersuchung von Mauerwerken aus dem 7. und 8. Jahrhundert hervor, dass weiterhin neue Backsteine hergestellt wurden, wenn auch in geringeren Mengen, und nur für herausragende Bauwerke und als Zusatzmaterial zu den wiederverwendeten Backsteinen.

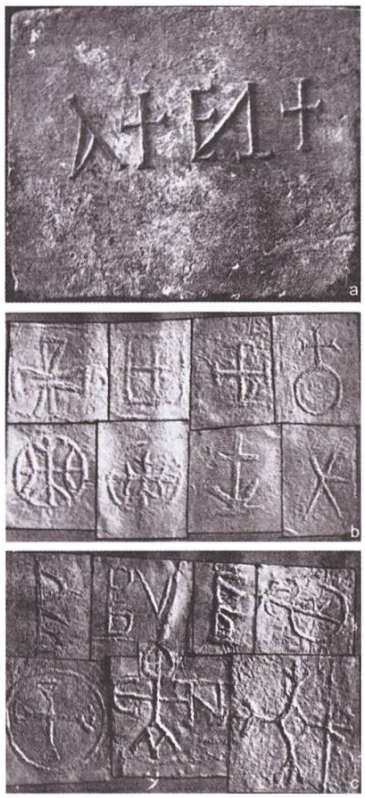


Fig. 18

Brickstamps from St. Demetrius Basilica:

(a) «+ ENT + A» brickstamp,
(b) brickstamps with various types of crosses,
(c) brickstamps with individual letters, symbols and cross-shaped monograms.

Backsteinstempel von der St. Demetrios Basilika:

(a) «+ ENT + A» Stempel,
(b) Backsteinstempel mit verschiedenen Typen von Kreuzen,
(c) Backsteinstempel mit Einzelbuchstaben, Symbolen und kreuzförmigen Monogrammen.

character, is probably a clue that the recollection of these ceramic building materials was most probably run by the public sector and that they were possibly considered as property of the state or, in the case of ecclesiastical foundations of the local diocese.

In most cases the reuse of the Early Byzantine bricks, with or without stamps, in later structures was dictated by practical and mainly economic reasons. On the one hand their production was extremely costly; additionally, the chronologically preceding large and organized in light-industrial terms Early Byzantine brickyards, which were arranged out of the fortifications, were abandoned and eventually destroyed, after the rural areas at the outskirts of the cities from the late sixth and the early seventh century became extremely insecure. Thus, the revival of the earlier workshops was practically impossible, while their relocation in the densely populated urban areas, even though some smaller, mainly pottery, production units have been found within the fortifications, usually in semi-urban areas close to the city walls, was not easy.[64] On the other hand the good quality and the fine preparation of the clay as well as the firing procedure followed during the manufacturing of the Early Byzantine bricks, and especially of those produced in official state workshops for the construction of public architectural projects, had as result their extreme strength and durability.

Based on the examination of seventh and eighth century masonries it seems that new bricks continued to be produced though in lesser quantities, only for prominent structures and as supplemental material to the reused one. Brick production flourished again in the city during the Middle and Late Byzantine periods in order to fulfil the construction needs of the prominent brick-built ecclesiastical foundations of Thessaloniki. The stamped bricks, bearing embossed monograms, Christian symbols and/or names with Christian connotation, after losing their original purpose as trademarks of the production, gained another symbolic use.
The architectural documentation of Medieval and post-Medieval structures in Thessaloniki showcases that the Early Byzantine stamped bricks, and especially these with obvious Christian connotation, bearing crosses or cruciform monograms were posed in the most visible or symbolic places of the new structures, used always with the stamped face upwards in key positions of the monuments, such as on staircases or thresholds leading to ecclesiastical buildings or their annexes, as well as on the sills of apse-windows.

Die Backsteinstempel, die Monogramme, christliche Symbole und/oder Namen mit christlicher Konnotation darstellen, verloren ihren ursprünglichen Zweck als Markenzeichen der Produktion und erhielten eine neue symbolische Bedeutung. Frühbyzantinische Backsteine mit Stempeln, insbesondere solche mit offensichtlich christlicher Konnotation wurden an den sichtbarsten und symbolträchtigsten Stellen der neuen Bauwerke platziert. Ein prominentes Beispiel ist die Restaurierung der frühbyzantinischen Acheiropoietos-Basilika, wo im 7. Jahrhundert Backsteine mit dem ENT*-Monogramm mit Kreuzen an Schlüsselstellen wie zum Beispiel an der Schwelle der südlichen Galerie verwendet wurden. Und auch in der Reparaturphase nach dem Erdbeben zwischen 813 und 820 wurden ihre Kreuze sichtbar aussen an den drei Apsisfenstern angebracht. Solche finden sich sogar an Wasserleitungen und Zisternen aus der mittelbyzantinischen Periode. Dieser Brauch wurde bis in die osmanische beziehungsweise postbyzantinische Phase weitergepflegt.*

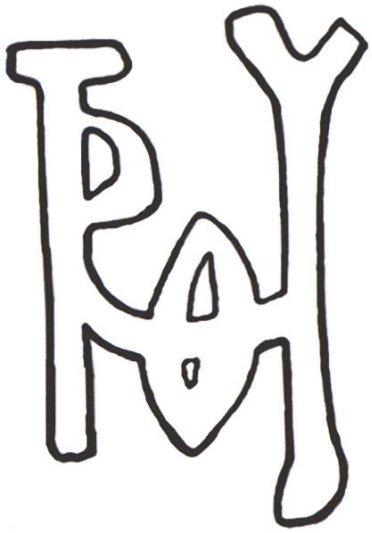


Fig. 19

Brickstamp with the monogram M[H]T[H]P Θ[EO]Y (i.e. Mother of God) from the Acheiropoietos basilica.

Backsteinstempel mit dem Monogramm
M[H]T[H]P Θ[EO]Y *(d.h. Mutter Gottes) von der Acheiropoietos Basilika.*

One prominent case is that of the bricks used in the seventh and ninth century restorations of the Early Byzantine Acheiropoietos Basilica, where bricks with the ENT monogram accompanied by crosses have been used in key positions, such as at the threshold of the south gallery of the basilica[65], or on the outer sill of the three arched windows of the sanctuary apse.[66] Most probably with an apotropaic character, as the symbol of the cross is placed in the – most vulnerable to the evil – openings of the ecclesiastical buildings.

Analogous cases have been documented in medieval public infrastructure. In the Middle Byzantine period Early Byzantine stamped bricks with their crosses on the upper visible surface are used on the floor of built water conduits and large cisterns of the public water supply system of the city.[67] In these cases earlier bricks have been carefully reused with their brickstamps visible for the protection of the water of the cisterns that was intended to meet the needs of the local society in drinking water.

Concluding, the paper presented analytically the various Byzantine embossed brickstamps of Thessaloniki and documented the pattern of their extended use in Early Byzantine monuments of the city, as well as their reuse in Medieval and Post-Medieval, both secular and ecclesiastical, structures.

Résumé

Briques et estampilles sur briques byzantines de Salonique

L'article de K. Raptis documente les briques de la première époque byzantine de Salonique fabriquées dans les briqueteries efficaces de l'Etat pour des constructions publiques consacrées à l'usage religieux ou séculaire. L'auteur porte un intérêt particulier aux estampilles qui, à part quelques exceptions, apparaissent sur les briques byzantines servant principalement à des buts logistiques. Au 7ème siècle la production de briques se réduisit sensiblement à cause d'une menace extérieure. Après la série de tremblements de terre au 7ème siècle et un nouveau tremblement avant l'année 820 les vieilles briques furent ramassées et réutilisées pour les travaux de reconstruction. Les briques estampées avec des symboles chrétiens ont acquis une nouvelle signification apotropaïque. Elles furent placées intentionnellement dans des positions clé bien visibles. Cette coutume persévéra jusqu'à la période post-byzantine et ottomane.

Fig. 20

Thessaloniki, northern city walls, Tower of Andronikos Lapardas. The inscriptions mention repairs under Andronikos Lapardas and Michael of Prosuch, members of the imperial court during the Komnemos dynasty in the second half of the 12th century.

Thessaloniki, nördliche Stadtmauer, Turm des Andronikos Lapardas. Die Inschriften erwähnen Reparaturen unter Andronikos Lapardas und Michael von Prosuch, Mitglieder des kaiserlichen Hofes während der Komnemos Dynastie in der zweiten Hälfte des 12. Jahrhunderts.

Biography (Kurzbiographie)

Konstantinos T. Raptis: Archaeologist-Byzantinist PhD, Ephorate of Antiquities of Thessaloniki City (Hellenic Ministry of Culture). Studied Archaeology and History of Art (1992–1997), and received MPh (2001) and PhD (2016) on Byzantine Archaeology from the Aristotle University of Thessaloniki. Visiting Research Scholar on Byzantine Architecture at the University of Illinois at Urbana-Champaign (2001); Academic Fellow on Byzantine Archaeology at the National and Kapodistrian University of Athens (2018–2019); Research scholar in the GETTY-sponsored workshop «Mediterranean Palimpsests» (2018–2022); Member of the International Association for the Study of Medieval and Modern Ceramics in the Mediterranean (AIECM3); Member of the Christian Archaeological Society (ChAE); Member of the interdisciplinary team of the University of California at Los Angeles and the University of Southern California Project «Soundscapes of Byzantium» (2014–2020); and Collaborator of the University of Arizona's Project «WEB Atlas of ancient ceramic kilns in Greece» (2016–2020). Presented and published papers and gave lectures on: (a) Byzantine Art and Architecture; (b) Byzantine Acoustics; (c) the Topography of Byzantine Thessaloniki; (d) Byzantine Technology with focus on ceramic kilns; (e) Ottoman Architecture; (g) Maintenance and Restoration.

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Figure credits

Fig. 1–3: Ephorate of Antiquities of Thessaloniki City
Fig. 4, 5, 20: Photographs by Jürg Goll
Fig. 6–10, 12–14, 17: Photographs by Konstantinos T. Raptis
Fig. 11, 15, 16: Drawings by Konstantinos T. Raptis
Fig. 18: Soteriou 1952, pl. 94
Fig. 19: Xyngopoulos 1941–1952, fig. 8

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Endnotes

1 Adam 1995, p. 61. Theocharidou 1985–1986, p. 100. Raptis 2011, p. 177.

2 Raptis 2011, p. 177. Idem 2012, p. 39.

3 On Byzantine brickstamps, see: Mango 1950, p. 19–27, and Bardill 2008, p. 193–201.

4 Raptis 2016, vol. II, p. 477. Idem, forthcoming-a.

5 Bardill 2004. Bardill 2008, p. 194–196.

6 Steinby 1986, p. 99–164. Idem 2001, p. 127–150. Bardill 2008, p. 197.

7 Mango 1950, p. 19–27. Vickers, 1973, p. 285–294. Raptis 1999, p. 229–236. Bardill 2008, p. 197–199. Theocharidou 2004, p. 221–235. Athanassiou et al. 2006, p. 299–317. Gerolymou 2014, p. 127 ff. Athanassiou et al. 2015, p. 41–42, 147¬149, 183¬184, 212. Raptis 2016, p. 469¬478. Idem, forthcoming-a.

8 Gerolymou 2010, p. 333–341. Idem 2014. Idem 2021, p. 189–194.

9 Bardill 2008, p. 200 with earlier bibliography.

10 Raptis 2016, vol. II, p. 476–477. Idem, forthcoming-a.

11 Texier and Popplewell Pullan 1864, p. 134.

12 Omont 1894, p. 212.

13 Tafrali, 1913, p. 76 ff., 153.

14 Diehl et al. 1918, p. 58.

15 Soteriou 1918; Idem 1952, p. 235.

16 Hébrard 1920, p. 31–32.

17 Kalligas 1936, p. 111–118.

18 Raptis et al., forthcoming. Raptis, forthcoming-a.

19 Raptis 1999, p. 220. See also Mentzos 1988, p. 197.

20 Raptis 1999, p. 220. Idem 2016,

vol. II, p. 469–470. Bricks with inverted brickstamps have been found at the Acheiropoietos basilica (Raptis 1999, p. 220. Raptis 2016, p. 470), in masonries of the palatial complex (Athanassiou et al. 2006, p. 307), at the Rotunda, the Hagia Sophia cross-domed cathedral – most probably from the ruins of the earlier Episcopal basilica – and the basilica of St Demetrius (Vickers 1973, fig. 1–3).

21 About the Late Antique and Early Byzantine monuments of Thessaloniki, see: Raptis, forthcoming-b.

22 Tafrali 1913, p. 153, fig. 1, Eski-Djouma, nos 1, 2, 5–7. Vickers 1973, p. 286–290, dr. 1–3, pl. 1 – type I.A6., I.B1 and I.D2. Raptis 1999, p. 220–221, dr. 1. Raptis 2016, vol. 2, p. 470–471. Raptis, forthcoming-a.

23 For an example, see: Tafrali 1913, p. 153, fig. 1, Eski-Djouma, nos 2, 5–7. Raptis 1999, p. 220–221, dr. 1.

24 Tafrali 1913, p. 153, fig. 1, Eski-Djouma, nos 2, 5–7. Vickers 1973, p. 286–290, dr. 1–3, pl. 1 – type I.B1. Raptis 1999, p. 221.

25 Tafrali 1913, fig. 1, Eski-Djouma, no. 1. Vickers 1973, p. 286–287, dr. 1, pl. 1 – type I.D2. Raptis 1999, p. 222. Idem 2016, vol. II, p. 472.

26 Vickers 1973, p. 286–287, dr. 1, pl. 1, type I.A6. Raptis 1999, p. 222. Idem 2016, p. 472.

27 Raptis 2016, vol. II, p. 472.

28 Vickers 1973, p. 286–290, dr. 1¬3, pl. 1, type I.A1 and IF.

29 Raptis 2016, vol. II, p. 473.

30 Athanassiou et al. 2006, p. 307.

31 Tafrali 1913, p. 76. Athanassiou et al 2006, p. 308.

32 Theocharidou 2004, fig. 9, a5.

33 Theocharidou 2004, p. 235, fig. 11.

34 Tafrali 1913, fig. 1, Eski-Djouma, nos 3–4. Raptis 1999, p. 222.

35 Theocharidou 1994, p. 172, 175, dr. 39, n. 6.

36 Mango 1950, p. 23–24. Soteriou 1952, p. 235. Vickers 1973, p. 291. See also Bardill's skepticism on this theory (Bardill 2008, p. 198–199).

37 Vickers 1973, p. 291–292. See also Bardill 2008, p. 198.

38 Bardill 2008, p. 198–199. Raptis 2016, p. 477–478.

39 Bardill 2004, p. 99ff. Rizos 2011, p. 456.

40 Rizos 2011, p. 456.

41 Raptis 2016, p. 475–476.

42 Tafrali 1913, fig.1, Eski-Djouma, no. 1. Vickers 1973, p. 286–287, dr. 1, pl. 1 – type I.D2. Raptis 1999, p. 222.

43 Raptis 1999, p. 224. Idem 2016, p. 475. Raptis et al. forthcoming.

44 Vicker 1973, p. 288, dr. 2. Raptis 1999, p. 224. Raptis 2016, vol. II, p. 474.

45 Raptis 2016, p. 476.

46 Vickers 1973, p. 290, dr. 3.

47 Theocharidou 1994, p. 175, dr. 39.3.

48 Raptis 1999, p. 224–225. Idem 2016, vol. II, p. 476.

49 Raptis 2021.

50 Athanassiou et al. 2006, p. 304 with earlier bibliography.

51 Hadjioannidis et al. 2014, p. 392, fig. 13.

52 Raptis 1999, p. 226. Idem 2016, p. 476.

53 Tafrali 1913, p. 77, 153, fig. 1, Eski-Djouma, no. 11. Theocharidou 2004, p. 223, fig. 4f. Raptis 2016, p. 476.

54 Tafrali 1913, p. 153, fig. 1, Eski-Djouma, no. 11. Raptis 2016, p. 476.

55 Tafrali 1913, p. 77.

56 Theocharidou 2004, p. 223, fig. 4f. See also Bardill 2008, p. 199.

57 Bardill 2008, p. 199.

58 About Constantinopolitan brickstamps, see: Bardil 2004; idem, 2008, p. 194–196.

59 Raptis 2021. Raptis et al. forthcoming.

60 Soteriou 1918, p. 19–20, fig. 26. Idem 1952, p. 235–236. pl. 94. Bardill 2008, p. 199.

61 Xyngopoulos 1941–1952, p. 483, fig. 8. Raptis 2016, vol. II, p. 478.

62 Raptis 2016, vol. II, p. 477.

63 Lemerle 1981, p. 104–110.

64 Raptis 2015, p. 504–506.

65 Raptis 2016, vol. II, p. 470, fig. 311a.

66 Raptis 2016, vol III, p. 490.