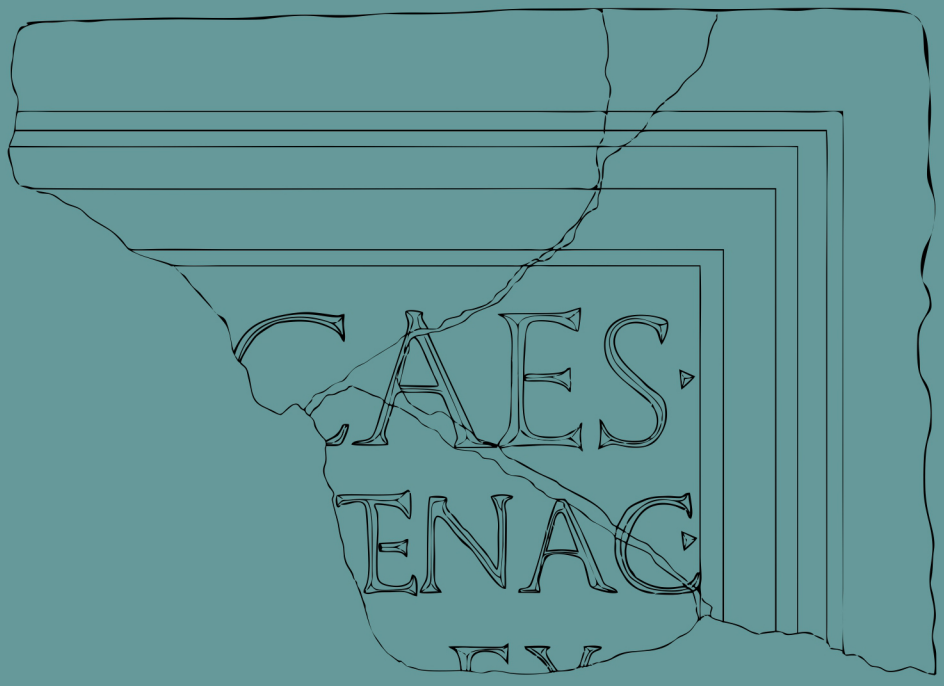
DISSERTATIONES ARCHAEOLOGICAE

ex Instituto Archaeologico Universitatis de Rolando Eötvös nominatae



FIRKáK IV.

Fiatal Római Koros Kutatók IV. Konferenciakötete

Proceedings of the 4th Conference for Young Researchers of Roman Age

Supplementum 1. | 2018

Dissertationes Archaeologicae
ex Instituto Archaeologico
Universitatis de Rolando Eötvös nominatae
Supplementum 1.

FIRKáK IV.

Fiatal Római Koros Kutatók IV. Konferenciakötete

Proceedings of the Conference for Young Researchers of Roman Age

Pécs, 26.11.2010 – 28.11.2010

Visegrád, 10.11.2011 – 11.11.2011

edited by

Dávid Bartus and Katalin Boruzs

Budapest – Visegrád 2018

Dissertationes Archaeologicae ex Instituto Archaeologico
Universitatis de Rolando Eötvös nominatae
Supplementum 1.

Editors:
Dávid Bartus
Katalin Boruzs

Available online at http://dissarch.elte.hu
Contact: dissarch@btk.elte.hu

PKP
PUBLIC
KNOWLEDGE
PROJECT

ISSN 2064-4574

Budapest – Visegrád 2018

Contents

Előszó – Foreword

Idén immár 12. alkalommal került megrendezésre a Fiatal Római Koros Kutatók Konferenciája, de az elhangzott előadások írott (hagyományos, papír alapú) formában történő megjelenése még sok esetben várat magára. Az első, 2006-ban tartott konferencia óta, melynek előadásai könyv formában már 2007-ben megjelentek, az utóbbi időben az aktuális konferencia és a kéziratok nyomdába kerülése között igen hosszú idő telt el. Ez több szempontból is hátrányos: egyrészt elmarad az új kutatási eredmények közzététele, amik a technika gyors fejlődésének köszönhetően gyakran már 1–2 év távlatából is elavultnak, túlhaladottnak számítanak. Másrészt csökkenhet a publikálási kedv, ami a konferencián elhangzottak szűk körben maradását vonja maga után, esetleg színvonalcsökkenést is.

A 2006-ban indult kezdeményezés, miszerint a római korral foglalkozó, kezdő kutatóknak is szükségük van saját fórumra, bebizonyította, hogy életképes. Az elnöki tisztséget betöltő egyetemi oktatók, elismert szakemberek biztosítják a rendezvények színvonalát, a „fiatalok" gyakorlatot szereznek az előadások készítése és prezentálása valamint a publikálás terén is. Éppen ezért is kifogásolható, hogy az elhangzottak nem „napra készen" jelennek meg. Ezt a „hibát" igyekszünk most kiköszörülni: jelen kötet nyomdába kerülésével a FIROKONF-on elhangzottak 2012-ig terjedően (az I–VII. konferenciáig) nyomtatott verzióban is elérhetőek. Célunk kivitelezéséhez hozzájárultak azok a kutatók, akik ennyi év eltelte után is bíztak a pozitív végkifejletben és rendelkezésünkre bocsátották kéziratait.

Reméljük, hogy a 2014 óta tartott konferenciák szervezői is optimistán állnak a manapság mostohagyerekként kezelt könyvkiadáshoz és minél hamarabb megtalálják a módját a publikációk megjelentetésének.

A FiRKÁK IV. kötete két rendezvény eddig nem publikált tanulmányait adja közre, emellett színesíti egy korábbi konferenciakötetből kimaradt kézirat, valamint Patay Pál Soproni Sándorra emlékező rövid írása, amivel Visegrád római korának jeles kutatója előtt szeretnénk tisztelegni.

Visegrád, 2018 áprilisában

Boruzs Katalin

Papers presented at the conferences

5th Conference for Young Researchers of Roman Age

26.11.2010–28.11.2010
Organizer: University of Pécs, Faculty of Humanities
Venue: Pécsi Kulturális Központ, Dominikánus Ház

Hoppál Krisztina: Minden út Kínába vezet? Avagy a Római Birodalommal kapcsolatba hozható régészeti leletek problematikája

Gábli Cecília: Plinius a gemmákról

Tóth István Zsolt: Beszámoló a Pécs Janus Pannonius u. 10. (Rózsakert) területén végzett 2010. évi régészeti kutatásokról

Borhy László – Számadó Emese – Dévai Kata – Bózsa Anikó: Brigetio polgárvárosának II. számú temetője (Komárom, Mártírok útja, Lidl)

Szabó Ernő: A collegiumok temetkezési hozzájárulása Pannoniában

Nagy Levente: Római lelőhelyek védetté nyilvánítása 2001 és 2009 között

Lassányi Gábor: Pannonia kifosztása

Wilhelm Gábor – Sóskúti Kornél: A Kiskundorozsma-Nagyszék lelőhelyen előkerült szarmata települések (2-5. század) római készítésű kerámiaanyaga

Vámos Péter: Észak-afrikai applikált díszű edények Aquincumban

H. Harsányi Eszter: Fehér a feketén – avagy hogyan kerül az ige a pohárra?

Szabó Ádám: Silvanus a sötét Pan

Bíró Szilvia: Földbe mélyített házak Pannoniában önálló településtípus vagy helyi jellegzetesség?

Csapláros Andrea – Neuhauser Tina: „Határok nélküli kultúra Noricum és Pannonia között"

Csiki József Attila: Környe község topográfiája archív légifotók alapján

Fehér Bence: Germanus, Respectus, Adiutor és a többi

Agócs Nándor: Augustalis testületek a Duna-vidéki tartományokban

Szabó András: Auxiliaris centuriok és decuriok

Farkas István Gergő: Újabb adatok a pannoniai auxiliaris csapatok titulatúrájának vizsgálatához

Varga Gábor: A Szentendrei-sziget római kori erődítettsége

Szabó Máté – Pánczél Szilamér: Rómaiak a Székelyföldön

Fazekas Ferenc – Szabó Antal: Újabb régészeti kutatások Lussoniumban (2009-2010)

Bartus Dávid: Bronzszobrok Brigetióból

Juhász Lajos: Egy újabb germán kisbronz Brigetioból

Merczi Mónika: Újabb sírok a nyergesújfalui tábor késő római temetőjéből

Hullám Dénes: Római tárgyak a Kárpát-medencei Barbaricum északkeleti részéről

6th Conference for Young Researchers of Roman Age

10.11.2011–11.11.2011
Organizer: King Mathias Museum of Hungarian National Museum
Venue: Visegrád, Királyi Palota lovagterme

Buzás Gergely: Római kövek a középkorban

Gróf Péter: A római limes visegrádi emlékei és a Dunai Limes – UNESCO Világörökség program

Tóth János Attila: Rómaiak a Dunában

Szabó Antal – Fazekas Ferenc: A lussoniumi régészeti kutatások újabb eredményei (2011)

Tokai Zita Mária: Kora császárkori temető Alsópáhok – Hévízdombon

Merczi Mónika: Újabb késő római sírok az Esztergom-Kossuth Lajos utcai temetőből

Ottományi Katalin: Késő római sírcsoportok Pátyon

Lassányi Gábor: Temető a Duna partján - Kutatások az aquincumi polgárváros keleti nekropoliszában

Kiss Péter – Polgár-Nyerges Anita: „A szombathelyi Járdányi Paulovics István Romkert újabb kutatásai"

Hódi Attila: Adatok a savariai Isis-szentély építéstörténetéhez

Balázs Péter: A savariai Iseum kútja

Sosztarits Ottó – A savariai Iseum

Tímár Lőrinc: Térszervezés a római lakóházépítészetben

Horti Gábor: A Római Birodalom határvédelmének mélységi tagozódása, kérdések és problémák

Szabó Máté: Nem romboló régészeti módszerek alkalmazása a pannoniai villakutatásban

Eke István: Késő római villa Badacsonyban

Pánczél Szilamér: Üvegtárgyak tanúsága egy színházból

Rupnik László: Sírköveken ábrázolt szerszámok Pannoniából

Sóskuti Kornél – Wilhelm Gábor: Római leletanyag a Felgyő–Kettőshalmi-dűlőben feltárt szarmata településen

Prohászka Péter: A Vértesketheli 4. századi éremlelet: lehetőségek a rekonstrukcióra

Torbágyi Melinda: Pénzforgalmi kutatások a római kori Magyarországon

New researches carried out in the Járdányi-Paulovics István Ruin Garden in Szombathely

The stone ornaments of the governor's palace from Savaria

Anita Nyerges

Budapest History Museum
Aquincum Museum
nyerges.anita@gmail.com

Abstract

The systematic research and excavation of the ruins of the Roman Savaria began in 1938 and the "Járdányi Paulovics István ruins garden" was opened in 1943 at the area of the west side of the Roman city, near the neo-classical baroque basilica. Archaeologist István Járdányi Paulovics found the first ruins of the Late Roman proconsul's palace in Savaria during the excavations of the ruins garden (at first Paulovics mistakenly identified the excavated ruins as the basilica of the martyr Quirinus). The most important finding was the ruins of the palace's imperial guest-hall (aula palatina), the largest dimensional mosaic remains of Pannonia were found here. The fragments of the guest-hall's marble decoration can be found in the collection of the Savaria Museum (Szombathely). Unfortunately, numerous marble fragments are stray finds and the fragments became intermixed in the museum. The systematic research of the marble fragments of the proconsul's palace began in 2013. The primary scientific elaboration was the stock-taking and the identification (primaeval place, function) of the fragments. The reviewed finds have varied pictures, the fragments have diverse forms and colours. We were able to separate some large face-stones with rhombus and rectangle forms, small and colourful frame brackets and fragments of profiled door and window frames. We were able to observe the tracks of the making (chisel traces) and the fixing (hole pressures and the tracks of the iron claps) on numerous fragments. The comparison of the marble fragments of the proconsul's palace with those of Savaria (for example the marble carvings of Iseum) is an important part of the research. Hypothetically speaking, on the basis of the marble carvings of Iseum we may expect that the marble decoration of the proconsul's palace could came from the antique marble quarries of Austria (Carinthia territory).

About the marbles

Ancient authors provide us with precious information concerning different building materials – among which marble – used at the decoration of different buildings. Pliny the Elder and *Vitruvius*[1] present in detail all the stone types known by them just like the stone material that have been used earlier. Furthermore, Pliny describes even the different transportation manners and working techniques of marble. In book XXXVI Pliny assesses that Romans split the mountains into *thousand sorts of marbles*[2], which were then transported to the place where

1 Vitr., *De arch.* II., books VII., X.

2 In Antiquity they called marble even those stone types which displayed similar characteristics to the marble, like i.e. granite or porphyry. (Plin., *Nat. hist.* XXXVI. V. 44.)

they were processed and fashioned into columns, statues or marble plates used for covering their walls[3].

Pliny relates also the technique of cutting marble into plates for which operation there was used sand. According to him, the Ethiopian sand was the most suitable for this activity. The second highly praised sand type was the Indian, but he recommended this only for polishing. According to him, this sand type needed to be used at marble polishing by burning it. Later, there has been discovered a new sand type on the sandbar of the Adriatic Sea which could be also used for this purpose, however it was accessible only at low tide. Pliny describes some fraudulent tricks during marble working: craftsmen used *all sorts of sands of every river* for cutting marble. Coarse sand was able to rub wider cuts, and abraded more marble pieces in the same time, leaving behind a larger effort in polishing. Therefore the thickness of the plate-cuts has been considerably reduced.[4] Pliny also mentions that *Marmurra*[5] was the first person in Rome who covered the walls of his home entirely with marble[6]

The research of the governor's palace from *Savaria*

The systematic and scientific investigation of the ruins of *Savaria* has started in 1938 in the *Püspökkert* coordinated by archaeologist István Járdányi Paulovics. The initiative of these investigations belongs, however, to Gyula Géfin, the vice rector of the Seminary in that period. During the excavations the works were conducted directly by him. As a result of this excavation, MOB (National Comittee of Monuments – in Hungarian) has launched the restoration works of the monuments and opened the Ruin Garden in 1943 for the public.[7] The Járdányi-Paulovics István Ruin Garden houses the ruins of the western part of the former Roman city of *Savaria (Fig. 1)*. During the excavation, there have been unearthed both the earliest and the latest phases of *Savaria*.[8] The restoration of the ruins and the afferent archaeological excavations have been carried out simultaneously and continuously from 1960 until today. The different campaigns were led by Tihamér Szentléleky, Terézia Buocz and Erika Hajmási.[9]

The first construction which has been unearthed during the excavations was a large-sized hall with apse and a mosaic floor. This was identified by the archaeologists as the *basilica* of *Quirinus*, bishop of *Siscia*, who died as a martyr in *Savaria.* Since then, it has been demonstrated that this building was actually not a *basilica*, but a part of a palace complex built at the turn of the 3rd – 4th centuries AD, and which became the official residence of the governor of this province. Due to the frequent visits of the emperor, the governor's palace was extended in the years after 330 AD. The reception hall of the emperor has been added in this period. The walls of the hall were covered partially with marble and wall paintings, while its floor was decorated with mosaic which is the largest mosaic-covered surface known today in the province of *Pannonia*, so far.[10]

3 Plin., *Nat. hist.* XXXVI. I. 2-3.
4 Plin., *Nat. hist.* XXXVI. IX. 51-53.
5 Cavalry men born in *Formiae* and the inspector of C. Caesar's engineering outfits in *Gallia.* (Plin., *Nat. hist.* XXXVI. VII. 48.)
6 Plin., *Nat. hist.* XXXVI. VII. 48.
7 Buocz 1991, 13.
8 Buocz 1995, 1.
9 Kiss 2002, 51.
10 Kiss 2002, 52.

István Paulovics,[11] Endre Tóth[12] and Tihamér Szentléleky[13] have widely discussed the construction history of the governor's palace from Savaria. Endre Tóth delimited three main construction phases: the first phase included all the construction activities that were carried out prior the creation of the smaller room with apse. The second phase is marked by the small room with apse and the adjacent walls, while in the third phase there has been built the aula with mosaic floor.[14]

The decoration of the governor's palace

The aula with the apse is measuring 51 m in length (43 m without the apse), 19 m in width, while the apse is 19 m wide. This could indicate that aula might have been only one-naved.[15] The floors of both the aula and the apse were covered on their entire surface with mosaic bordered with acanthus tendrils, decorated with vegetal and zoomorphical ornaments.[16] The middle part of the mosaic has totally perished during the construction works of the medieval castle's defensive ditches.[17] The architectural elements of the sides were covered with different coloured marble fragments arranged in a geometrical order.[18] The plinth was also furnished with marble.[19] The remains of the marble plates on the floor have been preserved on some places and they are still visible today.[20] The wall panels were decorated with red, black and white stripes[21]. This large-sized aula with mosaic floor was created by the extension of the smaller room with apse[22].

Beside the aula, the palace complex was composed of different buildings with altering functions. Gyula Géfin and István Paulovics have carried out smaller excavations during the foundation works of the Seminary's new wing[23] as well as in its court. We know from this researches that in north-south direction a narrower hallway was situated in front of the aula. On the eastern part, this hallway was joined by an *atrium* court. This situation was also confirmed by the new researches carried out near the western end wall of the Seminary in autumn 2011. Ten centimeter under the walking level a 12 cm thick *terazzo* floor was unearthed during this work. This feature belonged very probably to the walking level of the entrance hall in the 4th century AD governor's palace. The terrazzo floor was carefully consolidated with a foundation in *opus spicatum* style using stones from Csatár. The cavity under the *terrazzo* floor indicate the place of the floor heating system installation.[24]

11 István Paulovics considered the building an Early Christian *basilica.* (Paulovics 1943, 1–64.)
12 Tóth 1975a, 25–4 5.
13 Szentléleky 1991, 27–38.
14 Tóth 1975a, 40.
15 The *basilica* from Trier (*Colonia Augusta Treverorum*) is considered to be the closest analogy for the a*ula palatina* from *Savaria.* The 67 m long, 27,5 m wide and 30 m high *basilica*, functioning as a Lutheran church since the 19th century, was covered with mosaic and marble. (Tóth 1975b, 434; Clearly 2013, 201–203.)
16 Szentléleky 1991, 30.
17 Kiss 2002, 52.
18 Isztin – Tárczy – Tóth 2013, 190.
19 Szentléleky 1991, 30.
20 Tóth 1975a, 29.
21 Szentléleky 1991, 30.
22 Tóth 1975a, 25.
23 The building was called „Great Seminary" in that period. (Szentléleky 1991, 30.)
24 Based on the report sent to the Office of Cultural Heritage, Government Office of Vas County as an appendix attached to letter no. 38-398/3/2011.

The earlier building line of *insulae* situated south to the aula has been only partially preserved. The walking level of the peristyle courtyard from the western side was slightly raised, and an upper floor was erected above the corridor. The stairway of this corridor has been preserved.[25] The inner and outer corridor sides were decorated with wall paintings[26] towards the court, and its floor was covered with *terrazzo*[27]. Although the corridor of the earlier *peristylium* remained unchanged, a 12 m wide octagonal building was built in its central axis. A rectangular-shaped room was attached on all four sides of this octagonal building. From lateral sides other hexagonal or octagonal rooms were linked to these rooms.[28] The floor of the rectangular room attached to the western hexagonal room was also decorated with mosaic.[29] The corners were furnished with sermi-circular panels with wickered framing, while the central part was decorated with a medaillon also within a wickered frame ornament. The fields between the semi-circlular motifs from the corners and the central part were filled in with tendrils rising from *kantharoi*.[30] The corridor was open towards the courtyard, and it was delimited by it with pillars. A 5,4 m × 5,4 m squared room was situated on its western side, in the southern and northern corners. The western walls of this room correspond to the line of the former city wall. The 33 m × 36 m corridor of the peristyle hall was once covered, while the courtyard open.[31]

Painted wall plasters were found on the outer walls of the central lobed-building complex, as well as on the wall segments delimiting the court.[32] The decoration of the wall painting imitates the coloured marble textures of the covering panels.[33] Such marble imitation is the pink painting on the walls of the octagonal building which is running around the walls in a 80 cm height. The surface was further delimited into framed mirrors in a 120 cm height *(Fig. 2)*. Taking into consideration the fact that the Roman wall segments have been preserved only under the modern (or already under the medieval) layers, we can only estimate the original height of the bracket. The wall remains can be followed along a 25 m long surface of the lobed buildings.[34] The facade of the corridor was facing the courtyard with hatchways. These hatchways were not merely entrences, but also windowcases which were situated 1 m above the corridor's platform. Their inner side were painted in yellow, while their frames were consisted of a red stripe. The decoration corresponded to the style of the paintings which were decorating the outer walls of the central building.[35]

After the 4th century AD the building was renovated, and the floor of the hexagonal lobed room was raised. In this period only the octagonal core and the hexagonal room could have existed since a smaller entrance has been built over the destroyed walls of the northern rectangular

25 Szentléleky 1991, 33.
26 Nyerges 2013, 214–220.
27 Szentléleky 1991, 33.
28 Balogh 2007, 135.
29 Szentléleky 1991, 33., 36.
30 Buocz – Szentléleky 1975, 65.
31 Szentléleky 1991, 29.
32 At the trim of the mosaic floor from the rectangular room joining the hexagonal lobed-room traces of wall painting could be observed. So, the room might have been painted also from the inside, however there are no information about its inner decoration. (Szentléleky 1976, 46.)
33 Balogh 2007, 135.
34 Szentléleky 2000, 178.
35 Buocz – Szentléleky 1980, 49.

lobed room.[36] As it is attested by the 9th century AD Frankish, and later the Hungarian medieval castles which were built around it, the building remained in use very probably for centuries.[37]

East to the peristyle court a row of rooms followed. The ground plan of these rooms can not be determined today (except for two of them) since the construction of the medieval castle, ditch system and the cathedral's foundation works provoked serious damages in this area. The 3 m wide and 6 m long mosaic floor of one of the rooms has been unearthed in a relative good state of preservation.[38]

North to the aula, the new building complex was created by re-using only partially the earlier foundations. In this area, the 4th century construction works did not affect the ruins of the earlier three centuries. This late construction left untouched the sanctuary of *Mercurius*. In contrast to the building complex of the southern tract, the sanctuary was was not modified and no other building element was errected upon it. The inner roads, which delimited the *insulae,* were also taken out of use, just like at the southern side of the aula. The former narrow building part oriented east-west has been kept on the south-western side of the road taken out of use. On the northern and southern side of this building an apse terminal has been built, while on the narrow western side the regular terminal was constructed on the former whinstone road track.[39] István Paulovics considered this lobed building – excavated only partially – together with other elements of the building complex a *cella trichora*, an Early Christian construction.[40]

Methodology of the analysis

The complete plan of the governor's palace from the Járdányi Paulovics István Ruin Garden from Szombathely is unfortunately not known since the medieval castle, the sanctuary of the 18th century cathedral together with the Madonna chapel, as well as the building of the Seminary were all built upon the Roman structures, destroying the original Roman constructions.[41] The finds recovered from these contexts are usually too scarce for any reconstruction attempt of the former rooms. Even in the lack of large-sized composed surfaces traces of manufacturing, working techniques, systems consisted of fragment groups, ornaments, motifs of certain fields, or in some lucky cases dimensions still can be reconstructed. [42]

Although the cleaning and inventory of some stone ornamental elements from the aula with mosaic floor in the Járdányi Paulovics István Ruin Garden (now part of the Savaria Museum's collection) have been started already in the 1950–1960's, the scientific analysis of the fragments were begun only in 2012. At the inventory, grouping and selection works of the finds it was obvious that the available material was only a part of the rooms' former covering panels and ornaments. The material is strongly mixed and it does not form single large-sized panels. However, we can still reconstruct certain details of the ornaments on the basis of the smaller-

36 Szentléleky 1991, 33, 36.
37 Kiss 2002, 52.
38 Szentléleky 1991, 33, 36.
39 Szentléleky 1991, 36.
40 Paulovics 1943, 46–48.
41 Based on the restoration documentation no. SMRA 1985-05. (Savaria Museum Documentation Department of Archaeology)
42 Kurovszky 2006, 456.

sized panels and with the help of analogies. The reconstructions of the ornament details were made after the drawings of the original fragments on a scale 1:1.

The fragments were first delimited according to function, motifs, shape and colour types. The breakage surface, thickness, surface treatment, tool marks, use wears, as well as the mortar remains on the surface of fragments may also help the reconstructions.

The macroscopic investigation of fragments[43]

The macroscopic investigation of stone material identified four rock types and twenty marble variants. The twenty marble variants could be grouped into fifteen types according to colour and grain size. On the basis of the different stripe and layer colours further subtypes could be distinguished within these types. The typical green coloured „stones from Csatár" represent a special group in the analyzed find material. In the surroundings of Felsőcsatár the green slate has been continuously extracted from the Roman period until today. The coarse grained and green slate type was suitable for manufacturing floor tiles and stone sheathings for plinths, while the fine grained variant was used as ornaments. In the group of limestones we delimit the strongly cemented limestone varying in colour from white, dirty white to yellowish-white. This type of limestone is easy to carve and is a popular building material. To *Savaria* the closest limestone source of this type is located in the Leitha Mountains.[44] In the neighbourhood of today Fertőrákos (Kroisbach) and Szentmargitbánya (Sankt Margarethen) the Romans carried out very intensive marble exploitation. The limestone with pink texture appears also in our find material. Its closest analogy was found in the Mecsek and Villányi Mountains (known as „Tardos marble" in Gerecse). From a petrological point of view, this type of rock is not marble. However, due to its stripes and layers, similar to marble, its reddish and pinkish colour, as well as to its relative hardness, it can be well polished. For this reason, we can consider this ornamental stone also marble. The butter yellow coloured marlstone with slate-like break can be also placed into the group of limestones.

„*In situ*" stone ornaments and tool marks

After the extension of the palace, in the same period with the aula, the hallway walls were also covered with marble. The wall of the small room with apse dated to the previous period has been initially painted on the part where it meets the northern wall of the aula. Then it was covered with a 15 cm thick mortar layer which served as a basis for the marble wall covering panels. The marble stumps remained in this part in their original position in the floor *(Fig. 3)*. The marble wall covering was also noticed in the southern end of the room's eastern wall but without wall painting underneath. On the preserved western wall of the hallway, which is in the same time the end wall of the aula, a thick mortar layer with the imprint of the marble panels is to be noticed. Traces of wall paintings under the marble covering were not found in this case either. This could be explained by the fact that during the construction of the aula with mosaic floor and marble covering the eastern wall of the room, which is in the same time the western wall of the hallway, has been also rebuilt. The wall has been rebuilt, very probably,

43 In this work I was helped by Péter Solt, retired researcher of the Geological Institute of Hungary.
44 Török 2011, 5.

in order to extend the room and to construct the ornamented triple door hatchway belonging to the aula. For this reason it was easier and statically more reasonable to destroy it completely and to build a brand new wall instead.[45]

The stone carving tools were not merely the instruments of manufacturing and fashioning, but they helped also at shaping surfaces suitable to apply ornaments and mortars on them.[46] T. F. C. Blagg performed a serious and important inventory of architectural ornamental carvings from the Roman age *Britannia.* At the discussion of the stone quarries and stone carving tools, Blagg distinguished tools and instruments related to stone extraction, tools used for shaping and decoration, and tools for the final surface treatment *(Fig. 4).* J.-Cl. Bessac in his work, *L'aoutillage traditionnel du tailleur de pierre de l'Antiquité à nos jours* published in 1987 sets up also three main tool categories: 1. hammers/axes; 2. chisels; and 3. polishers/scrapers.[47] On the surface of the analyzed fragments I managed to determine in several cases the traces of tools employed in manufacturing. At the determination of working traces visible on stone surfaces I used Bessac's results based on his own research. Relating working traces to certain tool types seems to be problematic for two reasons: on one hand, the traces of many different tools are alike, on the other hand during the last stage of manufacturing, the polishing erased in many cases the characteristic marks on the stone surfaces.[48]

The working traces from the analyzed material can be ranged into three main groups. The dot, line, suture-like and groove shaped traces of hammers in various size and head shape, used both for roughing and finishing, have been preserved mainly on the hidden side of the carvings or on the joining surfaces. The traces of hammers with different projecting heads on the surfaces of uneven lateral sides suitable for joining are especially frequent *(Fig. 5).*[49] The second group is composed of chisel marks (chisels being used at shaping and decoration) which resemble with the hammer/axe traces from the stone surfaces. *(Figs. 6-7).*[50] The perforations destined for clamps used for fixing the carvings belong to the third category. (*Fig. 8-10).* István Paulovics has observed that the marble plates were fixed with a thick mortar layer mixed with crushed brick and using iron clamps fastened with lead. The joining sides of the marble plates faced each other with the sharp edge carved from inside out which resulted parallel grooves in the mortar *(Fig. 11).*[51]

Form types

In the analyzed heterogeneous material there can be distinguished basically more different functions:

- door- and window frame fragments,
- ledge fragments,
- floor and wall covering elements, respectively stone elements belonging to *opus sectile* type ornaments.

45 Tóth 1975a, 32–34.
46 Bessac 1987, 62, 71.
47 Bessac 1987.
48 Blagg 1976, 157; Bessac 1987, 118.
49 Bessac 1987, 20, 31–33.
50 Bessac 1987, 108, 112.
51 Paulovics 1943, 28.

In the material one can find simply articulated white marble ledge fragments with large crystalline structure as well as window and door frames with a series of carved mouldings which are the most valuable pieces of the material *(Fig. 12)*. In spite of the fragmentary state of the stone material basic floor and wall covering forms could be still delimited. Only a few of the rectangular-shaped, largest-sized covering panels with shiny surface have been preserved in a better state. The original size of one fragment (inventory number R.2014.1.125) can be determined on the basis of the preserved original lateral edges. The fragment was 55,5 cm long; 33 cm wide and 4 cm thick *(Fig. 13)*. Beside the aforementioned type another light blueish-grey coloured, square-shaped group could be identified *(Fig. 14)*. There can be also distinguished beside larger-sized central pieces, carvings which join them directly in a frame *(Fig. 15-16)*, respectively longer and thinner framing elements. On the basis of the arched lateral edge of one framing element (inventory number R.2014.1.) one can presume that it was initially an oval-shaped central carving type (pieces considered to be initially oval-shaped are represented in the material only by fragmentary pieces) *(Fig. 17-18)*. The group of the most coloured marble fragments used at *opus sectile* technique is composed of smaller-sized, rectangular elements *(Fig. 19)*. Among the group of (regular and irregular shaped) carvings used at *opus sectile* technique an almond-shaped piece needs more attention *(Fig. 20)*.

Results, perspectives, further tasks

An old and constant research topic of disciplines like archaeology, art history, architecture, and history of culture is the determination of quarries, the exploration of raw material sources of the different marble statues and architectural elements.[52] Taking into consideration the fact that Pannonia did not dispose of own marble quarries, this type of building material needed to be imported through commercial routes on water. This raw material arrived here especially from west, from the direction of *Noricum* down the rivers Danube, Mura, Drava and Sava; from east from the coasts of the Aegean Sea through the Marmara Sea and Black Sea, respectively by shipping upwards along the Danube. Due to appropriate waterways the import of marble products from the Eastern Alps region was much accessible than the transportation of marbles from Asia Minor and Greece since their overwhelming majority – if not entirely – arrived in Pannonia through the Iron Gates as it is attested by such marble statues found within this province.[53]

Due to the development of different instrumental investigations the isotope investigations seem to be the most reliable of all in the identification of former quarries and raw material sources of different marble statues and architectural elements. The stable isotope geochemical and petrographic investigation executed on two marble examples from the *Isis* sanctuary at Szombathely has clearly pointed out that the marble quarries near the settlement of Gummern (Austria, Carinthia) along the Drava were the main raw material source for these objects (Fig. 21).[54] Concerning the origin of the large multicoloured marble quantity from *Savaria* the marble quarries from the metamorphic region of the nearby *Noricum* province and the upper Drava region can come into the discussion.

52 In the subject see: Lővei 2005, 1–6.
53 Djurić 1997, 79.
54 Pintér-Zöldföldi 2005, 59.

References

V. Balogh, B. 2007: Beszámoló a savariai falfestménykutatás jelenlegi állásáról. In: Bíró, Sz. (ed.) *FiRKák I. Fiatal Római Koros Kutatók I. Konferenciakötete.* Győr, 133–145.

Bessac, J.-C. 1987: *L'aoutillage traditionnel du tailleur de pierre de l'Antiquité à nos jours.* Paris.

Blagg, T. F. C. 1976: Tools and Techniques of the Roman Stonemason in Britain. *Britannia* 7, 152–172.

P. Buocz, T. – Szentléleky, T. 1975: Szombathely, Járdányi Paulovics István Romkert *Régészeti Füzetek* I/28. 64–66.

Buocz, T. – Szentléleky, T. 1980: Szombathely, Alkotmány u. 1., Járdányi Paulovics Romkert *Régészeti Füzetek* I/33. 48–49.

Buócz, T. 1991: A Járdányi Paulovics István Romkert helyreállítási és feltárási munkái (I-III. sz.) *Savaria* 20/1, 13–25.

P. Buocz, T. 1995: – Püspökkert – Járdányi Paulovics István Romkert. *Lapok Szombathely Történetéből. Panniculus Series C* 31, 1–6.

Clearly, S. E. 2013: *The Roman West, AD 200-500: an Archaeological Study.* New York.

Djurić, B. 1997: Eastern Alpine Marble and Pannonian Trade. In: Djurić, B. – Lazar, I. (eds.): *Akten des IV. Internationalen Kolloquiums über Probleme des provinzialrömischen Kunstschaffens. Situla. Dissertationes Musei Nationalis Sloveniae.* Ljubljana 36, 73–86.

Isztin, Gy. – Tárczy, T. – Tóth, E. 2013: A savariai császári palota és díszterme. *Savaria* 36, 187–201.

Kiss, G. – Tóth, E. – Zágorhidi Czigány, B. 1998: *Savaria – Szombathely története a város alapításától 1526-ig.* Szombathely.

Kiss, P. 2002: A római kori Szombathelyt bemutató kiállítóhelyek. *Ókor* 1, 48–53.

Kurovszky, Zs. 2006: A szombathelyi Szily János utcában feltárt falfestménylelet összeállítása és elméleti rekonstrukciója. Analógiák és analízisek. *Savaria* 30, 455–487.

Lővei, P. 2005: Kőanyagvizsgálat, művészettörténet, műemlékvédelem. *Archeometriai Műhely* 2005/3. 1–6.

Nagy, E. 1991: Jean-Claude Bessac: *L'aoutillage traditionnel du tailleur de pierre de l'Antiquité à nos jours.* Revue Archaeologique de Narbonnaise Supplément 14, Paris, 1986. *Tanulmányok Budapest Múltjából* 23 337–345. [Rec.]

Nyerges, A. 2013: A szombathelyi Járdányi Paulovics István Romkert oktogonális épületegyüttesének falfestményei. *Savaria* 36, 203–221.

Paulovics, I. 1943: Savaria – Szombathely topográfiája. (Az 1938–41. évi kutatások eredményei) *Acta Savariensia* 1, 1–64.

Pintér, F. – Zöldföldi, J. 2005: A szombathelyi Isis-szentélyből származó két márványminta eredet-határozása stabilizotóp-geokémiai és petrográfiai módszerekkel. *Archeometriai Műhely* 2005/1. 57–59.

Szentléleky, T. 1976: Szombathely, Járdányi Paulovics István Romkert, Alkotmány u. 1. *Régészeti Füzetek* I/29. 46.

Szentléleky, T. 1991: A Püspökkert – Járdányi Paulovics István Romkert a III-IV. században. *Savaria* 20/1, 27–38.

Szentléleky, T. 2000: Római kori falfestmények sorsa, fenntartása, valamint bemutatása a savariai császári palotában. In: K. Palágyi, S. (ed.): *A kiemeléstől a bemutatásig: nemzetközi kollokvium a római kori falfestményekről, Veszprém, 1999. 05. 17–18.* Veszprém, 177–179.

Tóth, E. 1975a: A savariai császári palota építéstörténetéhez. *Archaeologiai Értesítő* 102, 25–45.

Tóth, E. 1975b: Késöantik császári palota Savariában. *Vasi Szemle* 29, 420–440.

Török, Á. 2011: *Mészkő műemlékek kőanyagának mállása.* Budapest 2011. MTA doktori értekezés.

Fig. 1. The plan of *Savaria*: the western city gate and the quarter of palace (the today Ruin Garden and its surroundings) (Kiss – Tóth – Zágorhidi 1998, 32. kép).

Fig. 2. The north-western wall of the Octogon's north-western rectangular room (Photo: Anita Nyerges).

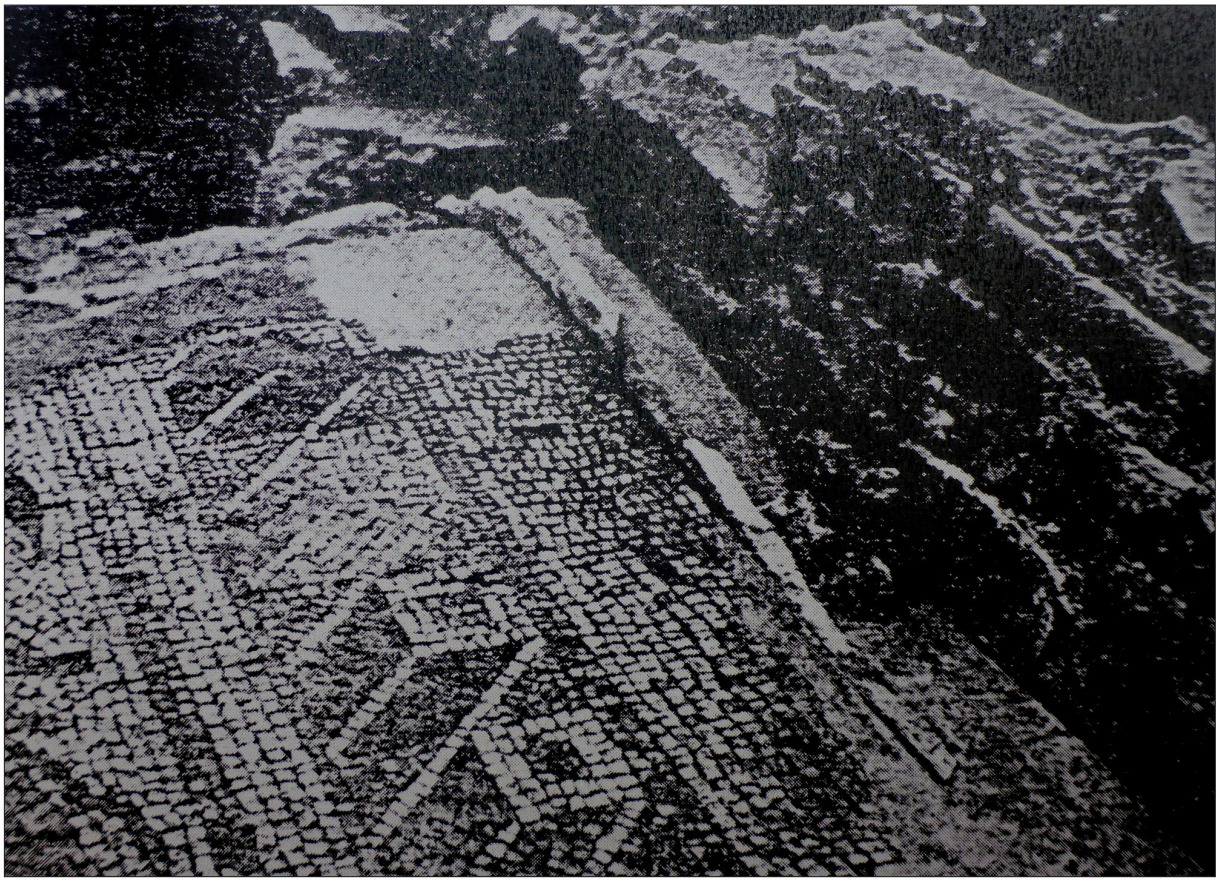


Fig. 3. Marble stump in the floor (Paulovics 1943, 12. kép).

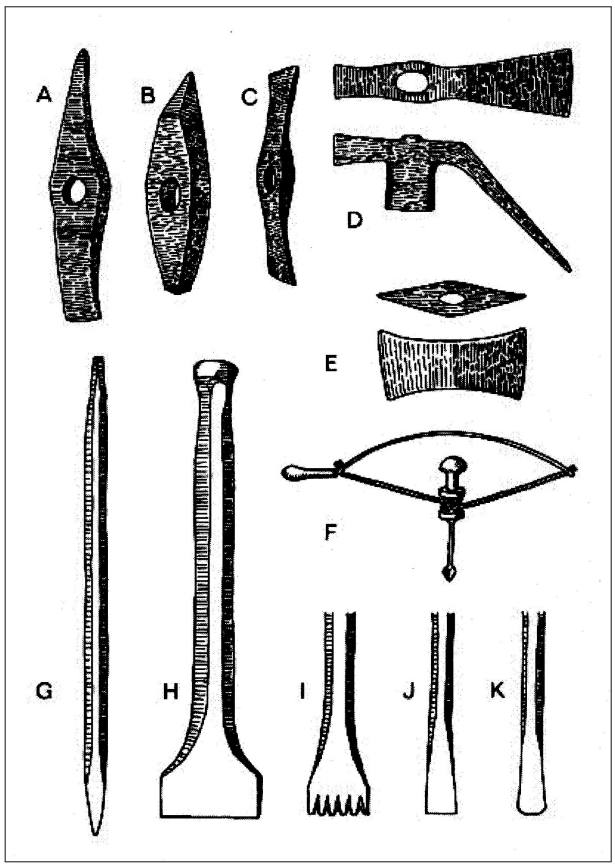


Fig. 4. Stone carving tools: pickaxes (A, B), adzes (C, D), axes (E), drills (F) and chisel (G-K) (Blagg 1976, Fig. 1.).

Fig. 5. Hammer marks on the lateral side of a marble element (54.437.125.).

Fig. 6. Chisel marks on a limestone carving (R.2014.1.91.).

Fig. 7. Chisel marks on a marble element used for *opus sectile* technique (54.437.91.).

Fig. 8. Hole for fixing stud on a carving (R.2014.1.38.).

Fig. 9. Perforation for fixing stud on a fragmentary stone element (67.1.59).

Fig. 10. The remains of an iron clamp in a stone element used for fixing (R.2014.1.147.).

Fig. 11. Imprints of marble plates in mortar and the place of iron clamps in the wall (Paulovics 1943, 13. kép).

Fig. 12. Frame fragment of a profiled window (?) (45.437.114.).

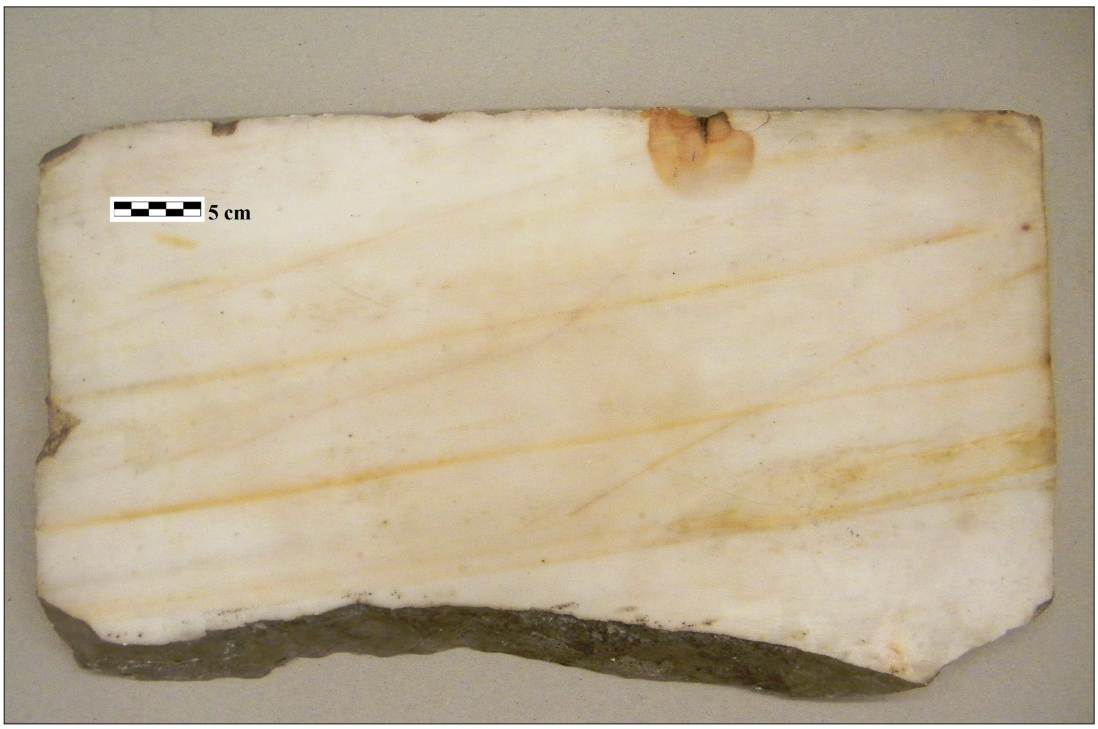


Fig. 13. Rectangular marble covering panel (54.437.125.).

Fig. 14. Rhomboid covering element. (54.437.10.).

Fig. 15. Framing covering marble element (R.2014.1.2.).

Fig. 16. Framing covering marble element (54.437.20.).

Fig. 17. Fragment of a covering panel with arched lateral side (R.2014.1.6.).

Fig. 18. Fragment of a covering panel with arched lateral side (R.2014.1.93.).

Fig. 19. Rectangular and coloured marble elements used for o*pus sectile* technique (54.437.57; 54.437.82; 54.437.44; 54.437.92.)

Fig. 20. Leaf-shaped stone element used for *Opus sectile* technique (R.2014.1.1.).

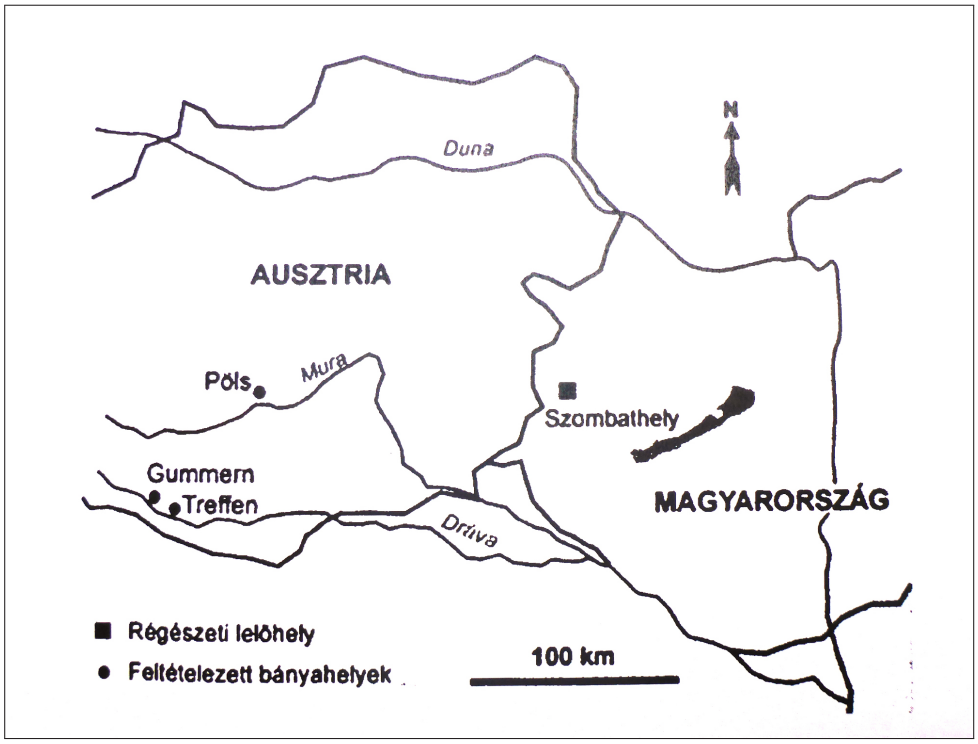


Fig. 21. Marble quarries from Austria in the near to the site (Pintér-Zöldföldi 2005, 1. ábra).