The research project was conceived in 2005 in cooperation of the Faculty of Arts in Ljubljana, the Archaeological Institute in Belgrade and the Museum of Srem in Sremška Mitrovica, with the participation of Harald W. Müller from the University of Natural Resources and Applied Life Sciences (Vienna), Igor Rižnar (Ljubljana) and Divna Jovanović from the Geological Institute (Belgrade). The work involved, beside the authors, also Slobodan Maksić from the Museum of Srem as the photographer.1 This report brings the results of the first season’s field work, conducted between the 20th and 27th August, 2006 at the Museum of Srem in Sremska Mitrovica (Serbia) and on the site of Dardagani, north of Zvornik (Bosnia and Herzegovina). The report also presents the results of subsequent analyses of the collected data. Limestone analysis made by I. Rižnar and D. Jovanović, which formed part of the project, are published here in a separate article.

The aim of the project is to analyse different aspects of the use of various stones in a typical Pannonian town with an atypical history,2 to reconstruct the standard model of supply of this town with certain raw materials that were not available in the near vicinity as well as to reconstruct the model of its use, on the one hand, and to establish the supply with this raw material for specific needs of the highest social elite from the end of the 3rd century onwards, on the other.

Data collection was limited to the material kept at the Museum of Srem, whereby we included the artefacts from the stone collection (lapidarium) and most of the finds from the excavations, which took place in Sremška Mitrovica from 1957 onwards, kept in the museum’s storage facilities.3 We described and photographed 1324 artefacts (stone collection 127, storage facilities 1197), and sampled (by core drilling) 322 artefacts (178 marble, 127 limestone, 17 other).

With the aid of mag. Mirko Babić from the Semberija Museum in Bjeljina, we conducted surveying and sampling in the valley of the Sapna River, north of Zvornik, in the only confirmed Roman quarry in the wider surroundings of Sirmium, the Sige/Bandera quarry,4 on the basis of the supposition that the limestone of

1 The members of the research team would like to thank Ivana Popović, head of the Sirmium project, for her kind support.
2 For the historical overview of the town see Mirković 1971; 2004; 2006.
3 For the sites excavated see Milošević 1994.
4 Arheološki leksikon Bosne i Hercegovine 2 1988, nos. 06.8 (Bandera) and 06.207 (Sige).
this quarry supplied Sirmium, using the Drina River as the most convenient transport route.

**RESULTS**

The results of the characterisation of stone, used for various categories of products uncovered at Sremska Mitrovica, are shown on Fig. 1. The most important stones, which stand out considerably in number, are limestone and white marble. They were used for all categories of products. Numerous other stones (so-called coloured marbles, volcanic rock, sandstone) appear in smaller, even very limited quantities and only for certain types of products.

### 1. LIMESTONE

**Lithotypes**

The analyses conducted by Igor Rižnar and Divna Jovanović (see Jovanović, Rižnar article in this number) on the material at the Museum of Srem have shown that three limestone lithotypes (I–III) and their variants were used in the production of funerary monuments, votive ara, inscription plates and milestones as well as architectural elements and interior furnishings. The origin for two of the lithotypes (I and III) was confirmed.

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**Fig. 1.** Stone types and their quantities in relation to the categories of the products from Sirmium

**Сл. 1. Типови камена и њихова кoličina u odnosu na kategorije proizvoda iz Sirmijuma**
to be the Dardagani quarry\(^5\) (Figs. 2, 3) on the left bank of the Drina River, which was used to transport the products and material most effectively to the Sava River and further on to Sirmium. Lithotype II, on the other hand, came from a different source. This has not yet been identified, but we propose, as a working hypothesis, to seek its source somewhere in Pannonia, whence it could have come to Sirmium via the same water routes that were used to transport Eastern Alpine marble.

1.1. Products

Funerary monuments

The limestone funerary monuments of the cemeteries of Sirmium are of three basic forms – stelae, portrait medallions, which probably formed parts of funerary arae, and sarcophagi, which may also be added a small ossuarium. Stelae were made only of Lithotypes I and II, in approximately equal amounts (7 of Lithotype I and 8 of Lithotype II), medallions from Lithotypes II and III (one example of each) and sarcophagi mostly of Lithotype III (5 examples), partly also of Lithotype I (2 examples). The use of Lithotype II for sarcophagi was more an exception than a rule (1 example preserved).

The stelae made of Lithotype I (SRM 35–37, 66, 156 and two unsampled) are typologically fairly homogenous. They show a typical reduced form of an aedicula with possible acroterial terminations with lions above a triangular tympanum, an architectonically conceived portrait niche underneath and an inscription panel within a moulded frame at the base. In their shape and modest as well as stylized plant ornament, they show most similarities with stelae produced in the area of Domavia (Srebrenica).

The stelae of Lithotype II are typologically quite varied, although they too belong to the reduced aedicula type in their basic structure. They have a semicircular (portrait) niche above the inscription panel at the base. These forms frequently appear in the area along the Danube, downstream from Aquincum (for example Dunaújváros).\(^6\)

The limestone sarcophagi are made of either Lithotype I (SRM 27–28, 49) or III (SRM 20–21=44, 34, 40, 50–51), with a single exception. They are characterized by double acroteria on the lids as well as specific stylized plant motifs of the decorative field frames on the

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5 Two known quarries, Sige and Bandera, are considered here as two units of a single, larger quarry complex and marked with the name of the nearby village.

6 Erdélyi 1974.
receptacles, which ties them to the funerary monuments of the Srebenica area. As a whole, they constitute a homogeneous group of products of a local workshop that ordered semi-products from the Dardagani quarry and gave them their final shape at Sirmium. The sarcophagi all date to the 3rd century.

One sarcophagus receptacle is made of Lithotype II (SRM 41). It is undecorated with a moulded lower rim (Fig. 4). The same lithotype was used to make an undecorated ossuarium, which represents an exceptional form of funerary monument in Sirmium. Both objects were supposedly imported from another part of Pannonia, which remains as yet undetermined (possibly an area along the Danube).

**Votive arae**

The numerous votive arae are made of limestone, with a single exception (SRM 13). As to the lithotypes, only I and II were used in their production, whereby a large portion was made of Lithotype II. These simple products represent a formally fairly homogenous group, where important differences appear mostly in the form of the part above the upper moulding, which was analysed in particular detail by P. Milošević.

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7 Paškvalin 1983; Davidović 2007.
8 Cermanović Kuzmanović 1965; Dautova Rusevljan 1983.
Analyses of material have shown an important correlation of Lithotype I with a group of altars with carved pulvini, on the one hand, and Lithotype II with a group of altars without pulvini, on the other. This might indicate a local production in the first case and a contemporary import in the second.

Discussion
Analyses of the limestone products and the determination of three lithotypes (I–III), on the one hand, and analyses of the samples from the Roman quarry at Dardagani, on the other, have enabled us to establish a positive connection between the production in Lithotypes I and III at Sirmium and the above-mentioned quarry. This extensive quarry complex with excellently preserved marks of extraction in galleries lies beside the Sapna River, the left tributary of the Drina, which was used to transport the semi-products to Sirmium. The Dardagani quarry is thus confirmed to be the main regional source of limestone for Sirmium.

The determination of lithotypes also allowed us to separate, from the group of limestone products, those of the local, Sirmium production, which were formally highly homogenous (stelae, sarcophagi, portrait medallions and votive area), and the products of the same categories that were imported, most likely from Pannonia.

1.2. Architectural elements
Corinthian capitals
Three groups of Corinthian capitals made of limestone were identified. The first group includes four large Corinthian capitals (SRM 47, 48, 60 and an unsampled capital), which probably originate from the hypothetical Forum. They are made of limestone, Lithotype I (two of Ic, one of Ib, see catalogue). The kalathos of these normal Corinthian capitals has two rows of independent acanthus leaves. Corner volutes and helices are flattened against the kalathos and stylized, they grow from organic cauliculi. Palmettes grow on top of the apices of the second-row leaves. The abacus has a saw teeth ornament, sometimes double. Their size (H. 62–63 cm; W. abacus 59–61 cm; lower diameter 53–54 cm) indicates that the columns of these capitals measured around 550 cm (18–19 1/7 Roman pedes) in height. The capitals are dated to the Trajanic period.  
The largest group of capitals from Sirmium includes sixteen Corinthian capitals (SRM 45, 46, 64, 67, 68, 71, 73, 243, 274, 289 and six unsampled capitals). The

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10 Jeremić 1995, 142 cites this location for SRM 60.
11 Jeremić 1995, 142.
12 Six of them bear the inv. numbers from A/1190 to A/1195.
fragment of SRM 216 also belongs to this group and may have chipped off of one of the above-mentioned capitals. The location of nine of these limestone capitals is known to be the hippodrome, where they were found among the ruins of a round corridor and originally belonged to a colonnade that supported the roof over the highest stand. The location of the remaining capitals is not known. The capitals of this formal group appear in two materials: twelve in limestone and four in marble. Furthermore, of the limestone capitals, nine were defined as Lithotype I (Ia, Ib or Ic) and one as Lithotype IIb, whereby the latter is considerably smaller in size. It is interesting to note that the different materials (LT I, LT IIb and white marble) correspond with different size classes. The capitals show a reduced form of a Corinthian capital. The kalathos has four large acanthus leaves underneath the corner volutes. The latter grow from centrally placed stems. The rows of acanthus leaves as well as helices and cauliculi are missing. This common form, however, shows certain differences in detail. The foliolo, for example, are pointed on some capitals (for example on SRM 46, 71, 274) (Fig. 5), rounded on others (for example SRM 45, 68) and some have the edges of individual foliolo cut off. The folioles of the lower lobes are contiguous. The form of the abacus flowers on these capitals differs, usually within an individual capital. Some flowers even have a stem running down the kalathos. The size of the capitals varies, whereby three size classes can be established: most limestone – LT I capitals (H. 40–50.5; W. abacus 44–47; lower diameter 36–39 cm), marble capitals (H. 29–34; W. abacus 34–41.5; lower diameter around 28 cm) and one small limestone – IIb capital (SRM 73: abacus width 22–23 cm). As can be observed, the differences in size among the classes are considerable. Having said that, the first size class shows various heights, while the lower diameters are comparable. Based on this, we may suppose that the capitals belonged to the same building (i.e. the hippodrome), but could have been used in various

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13 Comparable pieces, also from Srpska Mitrovica, are today kept at the Archaeological Museum in Zagreb (Brunsmid, 1911, 66–67, nos. 528, 529, 530). The material was identified in Brunsmid’s publication as either sandstone (no. 528) or white marble (nos. 529 and 530). Their size is comparable to the size of the largest class of limestone capitals, particularly capital no. 528, which is only slightly chipped at the resting surface, while the other two are less well preserved.

14 Popović, Ochsenschlager 1975, 170; Jeremić 1995, 142, Fig. 4, 5; Ertel 2005, 314–315, Abb. 5.

15 The museum’s inventory book revealed the location of Janka Ćmešlika Street for the capital of SRM 71.

16 Marble capitals include SRM 243 and three unsampled capitals, which may possibly be added also SRM 247, where two of the four leaves are not fully carved.
places and/or at various levels of the building. Considering the differences in capital height, the reconstructed heights of the entire columns varies drastically, from approx. 340 to 430 cm (11 3/5 to 15 1/3 pedes). The capitals date to the beginning of the 4th century.17

Limestone capitals include also three capitals of the Asiatic type, with spiky acanthus leaves. Of those, one is a pilaster capital (SRM 300; Fig. 6). It is made of LT IIa, its original location is not known. The column capital is made of LT II(b), it was found in a wall of the Imperial Palace and dates from the second half of the 3rd century (H. 34 cm).18 This date is earlier than that of the marble capitals of the Asiatic type from Sirmium. The third example is a fragment of the lower part, where only the first row of acanthus leaves is visible (H. 30; W. abacus 40 cm). It is made of LT III. Its location is not known and its date is, based on the highly stylized and geometric form of leaves, roughly the Late Roman period.

There are several other Corinthian capitals, which do not belong to any of the above-mentioned groups. One is a capital (SRM 72) of LT Ib. It is structurally very similar to the largest groups of reduced capitals from the hippodrome, though the shape of the four acanthus leaves is different. The leaves rise horizontally towards the corner volutes rather than at an oblique angle, as is the case with capitals from the hippodrome. In spite of the differences, the capitals are presumably close in their dates.19

The villa urbana (Site 4)20 yielded a Corinthian capital with plain leaves. It was made of LT I and represents a highly schematized form with a single row of plain leaves (with a cleft apex) and corner volutes. Helices and cauliculi are missing (H. 26; W. abacus 22; lower diameter 20 cm). It dates to the Late Roman period.21

Another capital worth mentioning is that on Fig. 7, made of LT Ic. It is a highly simplified Corinthian capital with a single row of stylized leaves of two heights, whereby the higher of the leaves replace the corner volutes. Helices and cauliculi are missing (H. 23.3; W. abacus – 28; lower diameter 16 cm). The kalathos terminates

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17 Jeremić (1995, 142) dates these capitals to the very beginning of the 4th century. Ertel (2005, 314–315) also dates the capitals to the beginning of the 4th century and ties this date to the construction of the hippodrome (most probably between 312 and 313 during the presence of Licinius or during the later stays by Constantine between 316 and 324).
18 Jeremić 1995, Fig. 3.
19 Its closest parallel is to be found at Gamzigrad (Romuliana), also made of limestone (Čanak Medić 1978, 205, cat.no. 48, sl. 53).
20 For a short description of the sites at Sirmium see: Milošević 1994.
21 Ertel 2005, 313, Abb. 4.
underneath a square abacus with a decorative pattern (unconnected beads?). Its original location is unknown.

Beside these, there are a number of fragments of Corinthian capitals, which could not be classified to none of the formal groups above due to their fragmentary state (SRM 207, 212, 213 and others).

**Composite capitals**

Limestone capitals include also three composite examples of two different types. The first one is made of LT Ib. Its kalathos has a single row of plain leaves, a plain fillet, stylized palmettes on the echinus and volutes with spirals (H. 22; W abacus. 20; lower diameter 16 cm), its original location is unknown (Fig. 8). The other two capitals are also fragments. They have a single row of acanthus leaves on the kalathos, rosettes in the volutes and two rows of beads on the echinus. They were found at Site 47 and made of LT III. The more preserved fragment gives the height of 27.3 cm (W. abacus 22 cm). All the composite capitals date to the Late Roman times, though the first type may be earlier due to the lower degree of schematization of the capital’s elements. Their size indicates that they formed part either of an interior structure or a smaller architecture.

**Square capitals**

Another distinct group is preliminarily identified as square capitals, though the possibility of them representing fragments of a cornice cannot, for the moment, be excluded. Most originate from Site 47 (at least eleven), two from Site 1a and two are of unknown original location. The fragments were all made of limestone LT III (two were sampled: SRM 217 and 222). They include only fragments and no completely preserved examples. They are decorated with palmettes, leaves and geometrical motifs such as meanders and saw teeth ornament. One fragment was decorated with a bird, possibly a peacock. Their size could not be determined due to the fragmentary state of the capitals. The fragments probably date to the Late Roman period.

**Shafts**

Limestone shafts appear in three variants (plain, fluted or spirally fluted) and in two lithotypes: IIb (rarer) and III, whereby the shafts of LT IIb are all plain. As for their original locations, Site 1a only revealed plain shafts of LT IIb and Site 47 only shafts of LT III (15 in all). The latter are plain, fluted or spirally fluted and their diameters range from 17 to 28 cm with a concentration between 20 and 22 cm. The locations for the remaining shafts are unknown.

The Museum of Srem also keeps a fragment of a large column shaft decorated with ivy branches in relief (SRM 288), made of LT IIb. It measures 70 cm in diameter, which would give, if topped by a Corinthian capital, a column of just under 7 m in height (around 23 pedes). The fragment thus formed part of a large (public) building at Sirmium.

**Bases**

Column bases belonged to all three lithotypes: I (Ia and Ic), IIa, IIb and III, whereby the lithotypes are represented in fairly equal numbers. Most bases are round and two are square (SRM 228), both made of LT II. As for the form, most are Attic Ionic bases, while one is a fragment (probably from the hippodrome) with a bevelled drum on a plinth.

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22 *Site 47, a public building at the Forum, is dated from the end of the 1st to the 4th century; Milošević 1994, 36–37.
23 *Site 1a: SRM 227, 299 and an unsampled shaft; unknown site: SRM 288 and an unsampled shaft.
24 *Site 47: SRM 185, 218, 219, 221 and eleven unsampled shafts; unknown sites: three unsampled shafts.
25 *Site 4: SRM 70 of Ia, unknown sites: SRM 74 of Ic, 287 of Ic.
26 *Unknown sites: SRM 278, 290.
27 *Unknown site: SRM 228.
28 *Site 47: SRM 220, unknown site: SRM 284 and two unsampled bases.
29 *The shape of a semi-product.
Cornice and consoles

Remains of consoles were made of all three lithotypes: I (Ia and Ic),30 IIB (Fig. 9)32 and III.33 Two of them (SRM 259) are smaller (interior furnishings), while the rest are large, constructional consoles. They are all different in form, though they share the decoration of acanthus leaves on the lower side and pulvini on the front, sometimes with spirals on the sides.

Fragments of cornice include roof cornice as well as various undecorated mouldings, either upper or lower. They were made of all three lithotypes of limestone except IIb, whereby the lithotypes are represented in fairly equal numbers: I (Ia and Ic),34 IIa,35 IIb36 and III.37 Only one fragment is identified as roof cornice (of LT IIa) with its moulding decorated with leaf-and-dart, egg-and-dart, dentils and bead-and-reel.

Veneering slabs

Limestone was used also for veneering slabs, more precisely for wall veneering, skirting-boards and opera sectilia. Two slabs (an opus sectile slab and a skirting-board) were made of LT II (the base more precisely of LT IIb), while other objects were made of grey, greyish and brownish limestones. The opera sectilia slabs are of square, hexagonal, octagonal38 and even curved shapes. One fragment probably represents a wall veneering slab decorated in relief with an acanthus leaf.

Discussion

Lithotype I is the most frequently used type of limestone, which is particularly true for the capitals. Most of these are of the Corinthian order, only one is composite. They date from the Trajanic period to and including the mid 4th century. The Trajanic period is represented with four capitals of a group from the hypothetical Forum. The present state of knowledge then indicates a hiatus until the 3rd century, represented by at least one capital, which was built into the walls of the Imperial Palace. The beginning of the 4th century brings a boom in capitals and architectural elements in general, which is surely connected with the new role of Sirmium as the imperial residence. The above-mentioned chronological span of capitals holds true also for the use of the quarry of LT I limestone, which was apparently in use throughout. The capitals appear in all three subtypes: Ia, Ib and Ic, even those of the same formal group: the nine LT I capitals from the hippodrome appear in all three subtypes and the three from the hypothetical Forum in Ib and Ic. Of the various elements made of LT I, capitals are by far the most numerous. However, it is very difficult to say whether this situation

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30 Unknown sites: SRM 268 of Ia and two unsampled consoles of Ia and Ic.
31 Site 35: probably SRM 211.
32 Unknown sites: SRM 259, 282.
33 Unknown site: SRM 275.
34 Unknown sites: two unsampled fragments of Ia and Ic.
35 Unknown site: one fragment.
36 Unknown site: SRM 276.
37 Unknown site: SRM 303.
38 Octagonal slabs of this form were found at Site 4, villa urbana; Parović-Pešikan 1971, Fig. 38. The same might hold true for hexagonal slabs (Parović-Pešikan 1971, Fig. 39).
is the consequence of the capital representing a more chronologically sensitive object and one that is interesting to collectors, as opposed to bases, shafts, consoles and cornices, or it reflects the actually more frequent use of the lithotype for capitals (due to easier carving, for example). The absence of shafts, on the other hand, might be a reflection of the state of research, but could also indicate that shafts were made of other stones.

Lithotypes IIa and IIb are rarely used for architectural elements. A slightly higher number is observed only for the column shafts, which is less likely to be connected to a higher toughness of the material but possibly to its decorative character. The low number of LT IIa and IIb objects would suggest a poor availability of the material (the lithotype being poorly suited for architectural purposes is less likely). One of the limestone capitals points to the use of the material in the second half of the 3rd century, which continued into the 4th century with other forms.

Lithotype III is again better represented, particularly with elements of the column. Consoles and cornices, on the other hand, are quite rare. The capitals are Corinthian, composite and square. Chronologically, the capitals point to the use of the lithotype in the Late Roman period, when it complemented the use of LT I. A fact that has to be kept in mind when discussing LT III, however, is that the number of artefacts is highly influenced by Site 47, which yielded a great quantity of architectural elements and their fragments made of this lithotype.

2. VOLCANOCLASTIC ROCKS

The Museum of Srem keeps two sarcophagus receptacles and a small fragment of a stone vessel that were made of genetically the same green and brown volcanoclastic rock (SRM 19 – green, SRM 30 – brown), which most probably originates from the wider area of Domavia (Srebenica). Another object of the same material is a large, completely preserved vessel of green volcanoclastic rock, held at the Semberija Museum in Bjeljina (Bosnia and Herzegovina) and found on a site near the Drina River. The objects made of this volcanoclastic rock used, similarly to the limestone capitals, the Drina River for transport and continued their route from Sirmium further down the Sava, as is attested to by at least two sarcophagi, one uncovered at Zemun (Taurunum, receptacle) and the other at Belgrade (Singidunum).

The two sarcophagus receptacles from Sirmium have the front panel divided into three equal or almost equal decorative fields. Side panels are decorated, while only one example is decorated at the rear as well, with a simple motif of fish scales (SRM 30). Although formally quite unique, certain of their decorative elements indicate a connection with the stone-masonry production of Domavia, where we should seek their origin.

3. WHITE MARBLES

White marbles were used at Sirmium for funerary monuments (arae, stelae, sarcophagi), votive ara, votive slabs, public inscriptions, round sculpture and architectural elements (capitals, shafts and bases of columns, moulded cornice and parts of entablature), veneering slabs that imitate architectural elements (pilasters, parts of entablature), opus sectile slabs and interior furnishings (transennae, parapets, mensae, small basins).

Macroscopically, these marbles show numerous variants, from completely white and fine-grained to greyish and coarse-grained or those with grey bands and dark lines. This indicates that we are dealing with white marbles from various sources. Only the presence of Proconnesian marble could positively be identified macroscopically, while the determination of other white marbles requires further analyses.

So far, such analyses were only conducted for a small portion of samples, more precisely for 42 monuments or their parts. These included four fragments of sculpture (SRM 24, 294, 295, 296) and one whole sculpture (sun-dial, SRM 12), two inscriptions (SRM 1, 17), fifteen funerary monuments or their parts (SRM 3–11, 14, 16, 18, 21–23), one votive ara (SRM 13) and nineteen architectural parts (SRM 2, 15, 65, 69, 75–83, 86, 87, 93, 94, 122, 253).

For many years, the characterization of classical marble and its quarries represented a much-discussed issue. Numerous authors (Craig, Craig, 1972; Herz, 1988; Waelkens, 1989) have applied physico-chemical and mineralogical-petrographical methods to examine and distinguish between marbles, particularly those used in antiquity. This research was conducted also in the northern Roman provinces, whence many quarries,
especially in the Eastern Alps, and archaeological objects have thus been analysed in the last ten years (Hemmers, Traxler, 2004; Müller, Schwaighofer, 1999; Müller, 2001; Müller, 2002; Müller, Uhlir, Vetters, 2004).

**Methods used**

Samples were obtained by means of core drilling (diameter of 10 mm). They were then washed with 1N HNO₃ and rinsed with distilled water. The stable isotopes of δ¹⁸O and δ¹³C were determined in accordance with Craig (1957) using a conventional standard (PDB). From each sample 50 mg marble powder was treated with H₃PO₄ at 25°C for 24 hours. The resulted CO₂ was collected in glass tubes, frozen at -70°C using liquid nitrogen and then analysed.

The chemical analyses were performed with ICP–MS. After total dissolution (100 mg marble powder in PTFE-tubes with 5 ml HClO₄+HNO₃ 1:1, 10 ml HF evaporated) the participation of 23 elements was obtained. Thin sections were analysed with the aid of a polarising microscope.

The results of these analyses (Table 1, Fig. 10) show that white marbles present at Sirmium originate from quarries in the Eastern Alps (Gummern, Pohorje) and the Mediterranean (Luni, Thasos, Paros, Afyon). Proconnesian marble, which was identified only macroscopically, can be added to the latter. Apart from these, there is a large group of white marbles, which are as yet undefined by marble analyses.

### 3.1. Eastern Alpine marbles

Eastern Alpine marble was used mostly for funerary monuments but also for architectural elements, ara and sculpture.

**Funerary altars**

Two parts of a composite funerary altar, such as were characteristic of the cemeteries of Virunum and Flavia Solva in the 1st and 2nd centuries, were uncovered at Sremska Mitrovica. The funerary altar UEL 4334, made of Gummern marble, has a very close analogy in Globasnitz (Iuenna), in the ager of Virunum. The decorative style and dimensions of the pyramidal termination UEL 4340, also made of Gummern marble, indicate that it belonged to the same composite funerary ara, which is confirmed by the data on the find published by I. Jung (1890).

**Funerary stelae**

Seven funerary stelae of white marble are kept at Sremska Mitrovica. Five of these were sampled and revealed either Gummern or Pohorje marble. Formally, they represent products typical mostly for Poetovio and towns in its vicinity (Flavia Solva, Savaria). Specific

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45 Analyses and interpretation were made by Harald W. Müller.
46 CIL III 10224.
47 UEL 2444; CSIR Österreich Virunum 659.
acroterial terminations of funerary stelae in the form of a pair of lions with various central motifs, traditionally tied to Poetovian production, were made of both Gum- 48 mern and Pohorje marbles. Their size indicates that we should suppose the cemeteries of Sirmium to include a number of marble stelae of similar size as those at Poetovio, measuring from 4 to 5 m in height. Typo- logically, these are two-storied stelae of the aedicula type with acroterial terminations in the form of a pair of lions, mostly with a portrait niche underneath, which is comparable to the unpublished fragment of SRM 7 (Fig. 11). Their production spans from the Hadrianic to and including the Severan period.

Sarcophagi
Six partially or completely preserved sarcophagi kept at Sremska Mitrovica are predominantly represented by sarcophagi typical of Poetovio, with a tripar- tite front panel. They were made of either Gummern or Pohorje marbles and came to the Sirmium market in the form of semi-products to be finished in local work- shops, though they could also be used in the cemeteries in the semi-finished state. The left side panel of an exceptional architectonic sarcophagus with a representation of Orpheus was made of Pohorje marble.

Table 1. Results of the isotopic analyses
Таблица 1. Результаты геохронологического анализа

<table>
<thead>
<tr>
<th>Sample</th>
<th>$^{18}O$</th>
<th>$^{13}C$</th>
<th>Quarry</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRM 1</td>
<td>-5.31</td>
<td>1.23</td>
<td>Gummern</td>
</tr>
<tr>
<td>SRM 2</td>
<td>-6.23</td>
<td>0.94</td>
<td>Gummern</td>
</tr>
<tr>
<td>SRM 3</td>
<td>-8.69</td>
<td>0.55</td>
<td>Pohorje</td>
</tr>
<tr>
<td>SRM 4</td>
<td>-5.81</td>
<td>0.76</td>
<td>Gummern</td>
</tr>
<tr>
<td>SRM 5</td>
<td>-11.65</td>
<td>1.56</td>
<td>Pohorje</td>
</tr>
<tr>
<td>SRM 6</td>
<td>-16.39</td>
<td>0.85</td>
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</tr>
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48 UEL 4339, 5722, 5724.
49 The best comparison is the famous Pranger from Ptuj, CIL III 04069=10870, UEL 3106, height 4.94 m.
50 The newly discovered sarcophagus from Šiš, kept at the Galerija Save Šumanović at Šiš, was also analysed (SRM 22, 23).
51 Type 2 according to Đurić 2001.
52 UEL 4329; the front panel from Sremska Mitrovica, now kept at the Archaeological Museum in Zagreb, might form part of the same sarcophagus; UEL 4358; Brunsnid 1905, No. 153.
53 Possibly also one unsampled fragment.
pedes). The capitals of SRM 80 and 81 show a common form: the kalathos has two rows of plain leaves, whereby the upper row is separated from the abacus by fully flattened corner volutes, while the central leaves touch the abacus flower directly. The capital of SRM 81 is 35 cm high (W.abacus 35; lower diameter 26.5 cm), which gives the total height of the columns at just over 300 cm (10 1/4 and 10 5/8 pedes). The capital of SRM 82 is only preserved in its lower part, but shows most resemblances with the capital of SRM 83. The latter shows the least reduced structure of the group. It has two rows of plain leaves as well as corner volutes and helices, both flattened between the leaves and the abacus. The differences in height and form, exhibited by these capitals from Site 4, indicate a varied architecture.54 They date to the mid 4th century.55

One column base was identified as made of Eastern Alpine marbles, more precisely of Gummern marble (SRM 76). It was uncovered at Site 4 (villa urbana), confirming thereby the picture shown by the plain-leaved capitals (made of Pohorje and Gummern marbles). Other bases from Site 4 were also made of white-greyish coarse-grained marble, but were not analysed further. They date to the mid 4th century.55 The variety in form of the bases also corresponds to that observed for the capitals of the same site: one form is that of a standard Attic-Ionic base and the other a base without the upper fillet and with a straight upper torus (SRM 76).

Gummern marble was used for an architrave (SRM 2). Considering its size and the inscription it bears, it could have formed part of a funerary monument of composite character, with several intercolumnia.

We identified two fragments of cornices (SRM 15, 78), more precisely lower/upper undecorated mouldings, of Gummern marble. Their original locations are not known. They are of smaller dimensions and may therefore have belonged to funerary monuments.

Discussion
Numerous quarries of white marbles in the Eastern Alpine area, in Noricum and the western part of Pannonia Superior,57 with a very strong production from the beginning of the 1st century AD (Gummern) or a little later (Pohorje), were opened to meet the demand of individual Roman towns and military camps in their immediate vicinity. Most of these quarries belong to the category of on site or local quarries, with the only exception in that sense being the Gummern quarry or its workshop, which exported into Pannonia along the

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54 Parović-Pešikan 1970.
56 It has, unfortunately, proved to be somewhat difficult to identify all the different bases among the fragments that are kept at the museum on the basis of the publication by Parović-Pešikan. She writes (1969, 267) of bases of an Ionic type with a double upper torus.
57 For quarries in Noricum see Müller, Schwaighofer 1999; Džurić, Hebert et al. 2005; Džurić, Müller 2007.
Drau/Drava and Danube Rivers in the 1st century, and was joined in this practice by the Pohorje quarry/workshop in the early 2nd century. The products of these two marbles have a parallel appearance at Sirmium throughout the 2nd, 3rd and 4th centuries, while the products from the 1st century were made of Gummern marble only. The quantitative relationship between the two Eastern Alpine marbles at Sirmium is 52% (Gummern) to 48% (Pohorje).

The products of these marbles came to Sirmium via a water route. This led along the Drau/Drava River through Mursa, along the Danube, its tributary the Vuka and the Ervenica Stream through Cibalae and further on along the Bosut and Sava Rivers.

As for the workshops, the products uncovered at Sremska Mitrovica show traits of particular workshops outside Sirmium or of their original workshops in Noricum and Poetovio.

The novel observation concerning these products is that there is a qualitative difference between the acroterial terminations with lions made of Gummern and those made of Pohorje marble. This difference might indicate the existence of a stone-masonry workshop of high quality, possibly in Gummern (or elsewhere outside Poetovio), and another workshop of poorer quality, in Poetovio or its vicinity. This, of course, is a working hypothesis that would need to be thoroughly verified by studying various types of products in Pannonia as well as in Noricum. The same difference in quality can be observed also in marble sarcophagi uncovered at Sremska Mitrovica. Those of Gummern marble show a high degree of quality in the execution of the moulded frames of individual fields/panels in the form of a Norico–Pannonian volute, while the typologically equal sarcophagi from Pohorje marble show a variant of poorer quality. An important observation, the significance of which can not yet be estimated, is that the architectonic sarcophagus of high quality was made of Pohorje marble. The location of its production cannot be determined as of yet. However, the unpublished sarcophagus fragment from Vinkovci and the front panel of a frieze sarcophagus from Ptuj, also made of Pohorje marble, indicate that we should consider in Poetovio, beside the typical tripartite sarcophagi of the Poetovio type, another production of richly articulated sarcophagi, both figurally and architectonically, using Pohorje marble. The newly uncovered sarcophagus from Šid, made of Gummern marble, confirms the trade with Norican marble or workshops as late as the second half of the 4th century.

Architectural parts (architrave, two cornice fragments), with the exception of Corinthian capitals and bases, could have formed parts of funerary monuments and cannot as yet be determined more precisely. Fairly varied plain-leaved Corinthian capitals and Attic-Ionic base, uncovered within the same architecture (Site 4 – villa urbana) show that the products of Eastern Alpine marbles were being used, in the mid 4th century, side by side with the products of white Mediterranean mar-

58 The term Pohorje quarry includes several quarries in the eastern part of the Pohorje, as they are supposed on the basis of the variety of their petrographic matrix. The only confirmed Roman quarry is Motaln quarry at Šmartno na Pohorju.

59 Only the funerary ara CIL III 10224, UEL 4334 from the end of the 1st century is known so far.

60 The connection between the Danube and the Sava via Cibalae has been established mostly by I. Bojanovski (cf. Iskra Janosić 2001, 46–49).

61 UEL 4341.

62 Vinkovci Municipal Museum.

63 UEL 5295.

64 Pop Lazić 2007.
bles within the same architectural units. Two analysed fragments of skirting-boards, made of Gummern marble, confirm the results of analyses of such pieces from other sites, which show that they represent typical products of the Gummern quarry/workshop.

3.2. Mediterranean white marbles
The analysed samples of white marble do not in any way give a representative picture of the presence of Mediterranean white marbles at Sirmium. They do, however, clearly show that white marbles from the main Mediterranean quarries were used in the representative architecture from the end of the 3rd century onwards. Thasos, Paros, Dokimeion and Luni are the sources of white Mediterranean marbles confirmed by analyses, macroscopically also marmor proconnesium. They were used mainly for architectural elements and interior veneering and flooring slabs, marmor lunensium also for sculpture.

Architectural elements
This first formal group includes five almost completely preserved Corinthian capitals of the Asiatic type. Their original locations are the hippodrome and Site 4 (villa urbana). All are made of greyish, fine grained marble, whereby marble analyses have shown two of these Asiatic capitals (SRM 65 and 69) to be made of Luni (Carrara) marble. All are normal Corinthian capitals. The kalathos bears two rows of spiky acanthus leaves as well as corner volutes and helices that grow from the cauliculi. Details in form as well as size, however, vary. Three capitals (SRM 65) show a very similar form even in details: the folioloae of the first row leaves touch by producing geometric forms, the leaves of the second row are without the lower lobes, the cauliculi are reduced and angular with medial leaf folioloae joining spirally underneath the helices. The first two capitals are of the same size, while the third one is slightly larger and has a horizontal tie connecting the helices, which is absent on the first two. The height of the first two capitals is 51–53 cm (W. abacus 48–52; lower diameter 36–38 cm), which gives the reconstructed column height of ca 440 to 480 cm (14 ¾ to 16 ¾ pedes). The capital of SRM 69 (Fig. 12) is slightly different in form from the above three capitals. It has two rows of acanthus leaves, but they are independent. The leaves of the second row have the lower lobes. The capital of SRM 285 shows a very particular feature – a palmette rising above the apex of the acanthus leaves of the second row. Its height, though, is comparable to SRM 65. The original location is unknown.

3.3. Undefined white marbles
Architectural elements
This group of undefined marbles includes products made of various white marbles, pure white to greyish in colour and with various inclusions, structures and stripes. Their sources have not as yet been determined. Of the column parts, the sampled elements include Corinthian and Ionic capitals. The former include also a group of capitals with a reduced structure, which are treated, on the basis of their formal comparability, comparable to SRM 65. The capitals from the hippodrome date to the first half of the 4th century. The capitals from the peristyle of Site 4, on the other hand, date to the mid 4th century. Together with the Asiatic capitals made of limestone (see above), the span of this type in Sirmium is from at least the second half of the 3rd to the mid 4th century.

Of the bases in the Museum of Srem, one (SRM 75) was possibly made of Parian marble and another (SRM 77) was made of Luni marble. They are both of the Attic Ionic type.

Veneering slabs or crustae represent the most numerous group of objects at the Museum of Srem. In most cases, we were unable to distinguish between crustae and pavimentum, that is between vertical and horizontal slabs. Fragments that can clearly be defined as to their position on walls, on the other hand, are the moulded veneering skirting-boards and horizontal elements. Analyses of white marble indicate the following quarries: Luni (SRM 86) and possibly Thasos (SRM 93, 94) for skirting-boards and Dokimeion (SRM 122) for one of the horizontal elements.

65 SRM 65, 69, 285, two unsampled capitals and two fragments (SRM 280, 283, possibly also two other unsampled fragments).
66 The capital of SRM 65 is from the hippodrome, more precisely the north range of the stand (Jeremić 1995, 141–142, Fig. 1). For the capital of SRM 69, the inventory book reveals Site 4 as the original location. The publication of the villa gives a photo of an Asiatic capital, which was found in the peristyle (Parovic-Pešikan 1971, 42, T. XV, 50). However, this fragment is not the same as that of SRM 69, since the leaves are contiguous.
68 Jeremić (1995, 141–142) dates the capital on his Fig. 1 (from the hippodrome) to the first half of the 4th century, while Nikolajević (1969, 656–658) dates the same capital into the first quarter of the 4th century. The latter also supposes that the capitals were made in a local workshop due to a poor execution on the part of the sculptor.
69 Constructional phase III, Parovic-Pešikan 1971, 43.
70 Parallels for the Asiatic type of capitals are extensive, but we may particularly mention those from Gamzigrad (Čanak Medić 1978, sl. 76, 117), Diocletian’s Palace at Split (Wilkes 1993) and Savaria (from the temple of Isis: Kiss 1987, 12, Taf. 23.1).
together with the limestone capitals of reduced structure (see above).\textsuperscript{71}

Among the component parts of a column, the shaft shows most variety in material. Most shafts are plain, but can appear also with flutes, even spiral ones.

**Bases** of unidentified white marbles are mostly of the Attic Ionic type, with one exception.

The material held at the Museum of Srem revealed two types of **cornice**: constructional and decorative.\textsuperscript{72} Cornice as a constructional element rarely appears in marble. It is, on the other hand, much more numerous represented as a decorative element.\textsuperscript{73}

Beside the fragments of decorative cornice, interior furnishings include several other elements: a number of slabs that **imitate architraves**,\textsuperscript{74} pilaster veneering slabs,\textsuperscript{75} plain and relief decorated **veneering** slabs (crustae) as well as **flooring** slabs (pavimentum). The fragments of **opus sectile**, probably representing flooring, show various shapes, from triangular, square, rectangular, hexagonal, octagonal, rhombic, semicircular and irregular.

Veneering slabs were uncovered at practically every site of Sirmium.\textsuperscript{76} They show a varied choice of white marbles, which indicates a similar decorative character as column shafts. However, the choice of marble for veneering slabs and for column shafts does not entirely correspond.

### 4. COLOURED MARBLES

The excavations that took place in various parts of Srem\textsuperscript{ska} Mitrovica after World War II\textsuperscript{77} yielded numerous products of the so-called coloured marbles, which came from distant sources. The quarries of these stones are to be found across the Mediterranean and the material came to Sirmium via the Black Sea up the Danube and Sava Rivers. The stones used only in architecture that was built and decorated from the end of the 3\textsuperscript{rd} century onwards, when Sirmium became the seat of the Caesar of the eastern part of the Empire, Galerius. Coloured marbles were used in great majority for decorative, either flooring or veneering slabs, while larger monolithic products only appear as column shafts and bases. All the main coloured marbles from the Eastern part of the Mediterranean and North Africa are represented at Sirmium. We identified the following stones or their quarries (Fig. 13):\textsuperscript{78}

1. Aswan (**Sieno**) – red granite, sienite; column base,
2. Wadi Hammamat (**Mons Basanites**) – green breccia of Egypt; flooring slabs,
3. Wadi Umm Wikala (**Mons Ophyates**) – granito della sedia di San Lorenzo; decorative slab,
4. Gebel Fatireh (**Mons Claudianus**) – grey granite, granito del Foro; column shafts,
5. Gebel Dokhan – purple porphyry; column shafts, **opus sectile**,
6. Gebel Dokhan – black porphyry; column shafts,
7. Ischehisar (**Aphyon**) – pavonazzetto; column shafts, veneering slabs, skirting-board, **opus sectile**,
8. Kasabali (**Larissa**) – verde antico; decorative slabs,
9. Skyros – breccia corallina, breccia di Settebasi; decorative slabs, column shaft,
10. Gebel Dokhan – purple porphyry; column shafts, **opus sectile**,
11. Gebel Dokhan – black porphyry; column shafts,
12. Ischehisar (**Aphyon**) – pavonazzetto; column shafts, veneering slabs, skirting-board, **opus sectile**,
13. Kasabali (**Larissa**) – verde antico; decorative slabs,
14. Eubeia (**Karystos**) – cippolino; column shaft, skirting-board, decorative slabs, **opus sectile**
15. Stefania (**Krokeai**) – green breccia from Sparta, porfido Vitelli; **opus sectile**, small column shaft,
16. Chenou – giallo antico; decorative slabs, column shaft,
17. Chenou – nero antico; column shaft.

The stones that have not yet been determined as to their source include various breccias, black marbles, dark grey limestones and others.

**Sienite** (Aswan)

One large column base with plinth of pink granite (Aswan) was identified (Fig. 14). It measures 35 cm in height (W. plinth 80; upper diameter 70 cm), whereby the total height of the column, if topped by a Corinthian

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\textsuperscript{71} SRM 243 and three unsampled capitals, which may be added also the capital of SRM 247, where the leaves are not fully carved.

\textsuperscript{72} Various mouldings of composite architectures are also considered as cornice.

\textsuperscript{73} Their decorative rather than constructional function is clearly indicated by the width of their standing surfaces, which is comparable to that of other veneering slabs. Comparable pieces from Srem\textsuperscript{ska} Mitrovica are today kept also at the Archaeological Museum in Zagreb (Brun{middot} 1910–11, nos. 604, 659, 660, 661, 663).

\textsuperscript{74} They are ascribed a particular function of imitating architraves on the basis of a feature typical of Ionic architraves – fasciae. Beside these, the slabs include also the frieze.

\textsuperscript{75} Decorative cornice, architrave imitation slabs and pilaster veneering slabs were made of white, white-greyish, greyish, but also white marble with greyish stripes, which was macroscopically identified as Proconnesian marble. Pilaster veneering slabs were exceptionally made also of white marble with pinkish structures.

\textsuperscript{76} Several relief decorated fragments show a striking similarity with some of the fragments now kept at the Archaeological Museum in Zagreb (for example Brun{middot} 1910–11, nos. 604, 659, 660, 661, 663).

\textsuperscript{77} Milo\textsuperscript{s}evi\textsuperscript{c} 1994.

\textsuperscript{78} The numbering and map of the quarries of coloured marbles is taken from Marmi colorati 2002, 264.
capital, is estimated at just under 7 m in height (around 23 pedes). It is one of the largest column parts treated here. Its original location is not known.

**Green breccia from Egypt** (Wadi Hammamat)
Green breccia from Egypt was used for **flooring slabs** only.

**Grey granite**
Gray granite was used for **column shafts** and **veneering slabs**. Three fragments of plain shafts were identified, one of which was originally found at Site 59 (the Forum area). They are quite large, with diameters ranging from 42 to 46 cm. This granite can probably be identified as granito del Foro (Mons Claudianus). Gray granite for veneering slabs was identified in four fragments, which show different sorts of grey granite: granito del Foro (Mons Claudianus) and granito della sedia di San Lorenzo (Mons Ophyates).

**Purple porphyry** (Mons Porphyrites)
This stone was used for **column shafts** and **veneering slabs**. Of the former, we identified eight plain shafts (Fig. 15),79 of which one is of smaller dimensions (6.5 cm in diameter) that indicate an element of interior furnishings rather than a constructional element. The diameters of columns otherwise vary, but show a concentration around 30 cm (1 pes). Purple porphyry as veneering slabs is represented by 16 fragments, whereby at least four formed part of **opera sectilia**. These slabs were square and rectangular in shape, inasmuch as the fragments are large enough to reveal their original shape. The original locations are Sites 28, 31 and 66.

**Black porphyry** (Mons Porphyrites)
Five plain **column shafts** of black porphyry were identified at the Museum of Srem. Their diameters vary from 25 to 34 cm, but show a concentration around 30 cm (1 pes). Two shafts show signs of repair (Fig. 16). Their original locations are not known.

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79 Purple porphyry shafts were found at Site 1a, identified as part of the Imperial Palace (Parović-Pesikan 1968, 81).
Fig. 14. Column base of pink granite

Fig. 15. Column shaft fragment of purple porphyry

Fig. 16. Column shaft fragment of black porphyry

Fig. 17. Column shaft fragment of pavonazzetto
Pavonazzetto (Dokimeion)
This stone was used for column shafts (Fig. 17) and, predominantly, for veneering and flooring (opus sectile) slabs.

Verde antico (Larissa)
This is one of the most widely spread stones accessible as to its cost, used almost exclusively for flooring slabs.

Breccia corallina, breccia di Settebasi (Skyros)
A fragment of a breccia corallina column shaft was uncovered at Site 1a. Its lower diameter measures 17 cm and indicates a smaller column of interior furnishing. Two fragments of breccia corallina veneering slabs include a veneering skirting-board and a small and finely polished opus sectile slab (rhombic in shape).

Cippolino (Eubeia, Karystos)
This was a popular and very frequently used decorative stone. It was used in Sirmium for column shafts, but also for skirting boards, veneering and opus sectile slabs.

A cleft slab made of cippolino marble (L. 41.5; W. 31; Th. 1.8) bears a quarry mark (of a block), which most resembles the Greek letters ΦΗ or ΗΦ (Fig. 18). Its original location is not known.

Marmor lacedaemonium (Krokeai)
This material was used at Sirmium for interior furnishings. One shaft of this stone was identified, though its size (16.5 cm in diameter) rather indicates interior furnishings as well.

The material in the Museum of Srem includes, as much as we were able to identify, 21 fragments of marmor lacedaemonium (at least three were of opera sectilia). These slabs were in triangular and rectangular shapes, inasmuch as the fragments are large enough to reveal their original shape. The original locations for either shafts or veneering slabs are only rarely known.

Giallo antico (Chemtou)
The stone was used at Sirmium exclusively for veneering. We identified 39 fragments of veneering slabs, one of which is a skirting-board from Site 29 and at least 4 fragments of opus sectile slabs.

Nero antico (Chemtou)
One column shaft of nero antico was identified, of unknown original location (Fig. 19).

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80 It can probably be identified with a fragment that was interpreted as decoration (baluster) of a stairway balustrade (Milosević, Milutinović 1958, 24–25, sl. 27/1).
Alabaster
Calcite alabaster was used at Sirmium for spirally fluted shafts. Two fragments of those were originally found at Sites 47 and 58, respectively. Their diameters measure 40 and 26 cm.

The same stone was used also for veneering slabs, two fragments of which are kept at the Museum (of unknown original locations).

Breccias
The group of veneering slabs made of breccias (other than breccia corallina and green breccia of Egypt) is composed of 20 fragments of various thicknesses and colour combinations. Many are unevenly and roughly cut and probably represent the remains of large flooring slabs. A trapezoid fragment also indicates opus sectile.

4.1. UNDEFINED COLOURED MARBLES
This group consists of products of coloured stones, the source of which has not yet been identified. These include various coloured marbles and breccias, which were used for the production of column shafts and veneering slabs.

Discussion
As has been stated already for column shafts of white marbles, they show a great variety in material. This is clearly discernible also with shafts of coloured marbles. These include pavonazzetto, cippolino, grey marble, nero antico, but also alabaster, purple and black porphyry, grey granite and breccia corallina. Most shafts are plain, particularly those with an uneven colour or structure (cippolino, pavonazzetto). Shafts of grey marbles, nero antico and alabaster can appear also with flutes, even spiral ones.81

Veneering slabs of coloured marbles include veneering skirting-boards, opus sectile slabs and other, indefinable veneering fragments. Moulded skirting-boards were made of cippolino marble (two fragments) and breccia corallina (one fragment), all from Site 29.82 Veneering slabs, both opus sectile and indefinable fragments with or without relief decoration were made of cippolino, pavonazzetto, verde antico, and other coloured marbles as well as alabaster and different breccias. In this, they exhibit a similar decorative character as column shafts, though the choices of stone for veneering slabs and column shafts do not exactly correspond.

As stated above, it is very difficult to differentiate between wall veneering (crustae) and flooring slabs (pavimentum). We should, however, mention the fragments of opera sectilia separately. Of the coloured marbles, we identified pavonazzetto (one hexagonal and one round one), which represents the central slab, but also purple porphyry and marmor lacedaemonium.

General conclusions
The main results of the research conducted in 2006 may be summarized thus:

1. Sirmium, from its very beginning onwards, is without an on site or local quarry and was thus forced to meet its demand for stone through import. The closest established and confirmed quarry that supplied Sirmium with limestone (Lithotype I) already in the 2nd century was the Dardagani quarry, which shipped its products along the Drina River. This quarry became, at least in the 3rd century, the main source of limestone for the town (Lithotype I is joined by Lithotype III).

2. Import from distant sources in the 1st to 3rd centuries is connected to the limestone from Pannonia (?) (Lithotype II) and white marble from the Eastern Alps (beginning already at the end of the 1st century). According to the present knowledge, this marble was in use until the end of the 3rd century exclusively for funerary monuments.

3. To meet the needs of the imperial architecture in Sirmium, the already existing sources of stone are joined, at the end of the 3rd century, by Mediterranean stones from quarries that were predominantly imperially owned.83 The use of these stones at Sirmium has a particular significance in the fact that it was rather short-lived and concentrated in the period when the role and organisation of ratio marmorum were significantly altered.84

82 Parovic-Pešikan writes (1964, 87–88) of the pools of the frigidarium being clad with marble slabs of reddish, greenish and white colours.
84 Fant 1993.
CATALOGUE

LIST OF ABBREVIATIONS

D – depth;
F – original location;
H – height;
K – current location;
L – length;
MS – Museum of Srem;
SM – Sremska Mitrovica;
Th – thickness;
W – width;
Ø – diameter.

White marbles

SRM 1 (Pohorje)
Slab with inscription, fragment. H. 62; W. 47; Th. 23.
References: unpublished.

SRM 2 (Gummern)
Architrave with inscription, two fragments. There are two standing surfaces with dowel holes, which indicate that the architrave was supported by (at least four) columns. The upper surface has a moulded frame and a rough hole at the left end. The inscription on the front surface is within a moulded frame and continues to the left and right. The lower surface is decorated with a two-sided pedum covered with laurel leaves and topped on both sides by a cone as well as with two pairs of teniae stemming from the centre of the pedum. The fragments are vertically cut at both ends and point, together with the rough hole and moulding on the upper surface, to secondary use. H. 59; L. 310; Th. 39.
References: Jung 1890, 25; Ljubić 1890, 1–3, Tab. I; Schober 1923, 141, Fig. 162; Mirković 1971, 70, Pl. V1; Dautova Ruševljan 1983, 15, Pl. 10,1.

SRM 3 (Pohorje)
Funerary stela with inscription, fragment. H. 20; W. 48; Th. 19.
References: unpublished.

SRM 4 (Gummern)
Body of a monumental funerary ara, type C according to Kremer (2001). The front side has an inscription field within a broad frame filled with flowering acanthus scrolls, growing out of a chalice on the bottom part and concluding at a mask in the centre of the upper part. The scrolls are inhabited by animals (birds, lizard, tortoise). The left and right sides each have a relief of a mourning Attis on a pedestal, within a moulded frame. H. 104; W. 86; D. 44. End of the 1st c. (Schober 1923).
References: Jung 1890, 25; Ljubić 1890, 1–3, Tab. I; Schober 1923, 141, Fig. 162; Mirković 1971, 70, Pl. V1; Dautova Ruševljan 1983, 15, Pl. 10,1.

SRM 5 (Pohorje)
Acroterial termination of a funerary stela with a pair of heraldically positioned lions and a basket-shaped cist with a bearded head in the centre. H. 75; W. 118; D. 44.
F: SM, near the orthodox graveyard, end of the 19th c. K: MS, inv. no. A/5.
References: Gavela 1954–55, 45, Fig. 2; Dautova Ruševljan 1983, 14.

SRM 6 (Pohorje)
Sarcophagus receptacle with a tripartite division of the front panel. The central field within a moulded frame was intended for the inscription, which is missing. Both lateral fields are without moulded frames and have a simple Norico–Pannonian volute as their upper ending; they hold a representation of an Eros with a torch across his chest. The two side panels hold, inside an unframed field, a representation of a fantastic animal in front of a tree. Traces of paint are preserved. H. 67; W. 185; D. 75.
References: Garašanin M., Garašanin D. 1951, Pl. X1d; Cermanović Kuzmanović 1965, 103; Dautova Ruševljan 1983, 16, Pl. 23,1.

SRM 7 (Gummern, Pohorje?) (Fig. 11)
Funerary stela, fragment. The lower part of a male (?) bust and right hand are preserved in the portrait niche; the horizontal decorative zone underneath is decorated with an undulating vine branch with grapes. H. 23; W. 36; Th. 8.
References: unpublished.

SRM 8 (Gummern)
Sarcophagus receptacle with a tripartite division of the front panel. The central field within a moulded frame was intended for the inscription, which is missing. Both
lateral fields have moulded frames, which terminate above in a rich Norico–Pannonian volute. A coarsely dressed stone mass is left in both fields as well as in both fields with moulded frames on the side panels. H. 83; W. 225; D. 109.

References: Cermanović Kuzmanović 1965, 102; Dautova Ruševljan 1983, 16, Pl. 22.1.

SRM 9 (Gummern)
Acroterial termination of a funerary stela with a pair of heraldically positioned lions. Head of the left lion is broken off. The central part is also broken off and only the lower part of a person sitting on a chair, facing right, is preserved. H. 65; W. 150; D. 41.
References: Dautova Ruševljan 1983, 14, Pl. 6,7.

SRM 10 (Gummern)
Acroterial termination of a funerary stela with a pair of heraldically positioned lions and a cist with mourning putto in the centre. H. 74; W. 167; D. 45.
References: Gavela 1954–55, 46, Fig. 4; Dautova Ruševljan 1983, 14, Pl. 5,3.

SRM 11 (Pohorje)
Left side panel of an architectural-type sarcophagus, fragment. The left of the two arches holds a representation of Orpheus, sitting turned to the right and playing the lyre. Part of a damaged tree is visible under the right arch. H. 59; W. 92; Th. 20.
References: Kalinka, Svoboda 1890, 27–28, no. 6; Cermanović Kuzmanović 1965, 101; Dautova Ruševljan 1983, 17, Pl. 32,1.

SRM 12 (Pohorje)
Sun-dial supported by three male figures (Atlas, Hercules and Iphicles). H. 106; W. 83; D. 72.

SRM 13 (Pohorje)
Votive altar. H. 120; W. 60; D. 44. Dated to AD 197 at the latest (Mirković, 1971).
References: Mirković 1994, 394, no. 65.

SRM 14 (Gummern)
Pyramidal upper part of a (funerary?) altar, topped by a square Corinthian capital. The front side is decorated with a rich acanthus calix and acanthus tendrils with flowers, while both lateral sides have vine with grapes growing from a kantharos. H. 115; W. 58; D. 47.
References: Jung 1890, 25; Ljubic 1890, 1–3, Tab. I; Schober 1923, 178, fig. 186; Dautova Ruševljan 1983, 15, tab. 11/4.

SRM 15 (Gummern)
Decorated cornice, fragment. The moulding is decorated with a vine branch. H. 20; W. 37; L. 39.
References: unpublished.

SRM 16 (Pohorje)
Front panel of a sarcophagus with inscription, fragment of the central part. H. 14; W. 42; Th. 17.
References: unpublished.

SRM 17 (Gummern)
Slab with inscription inside a frame, formed by a band of leaves. H. 40; W. 48; Th. 12.
F: SM. K: MS, no inv. no.
References: unpublished.

SRM 18 (Pohorje)
Tripartite front panel of a sarcophagus, fragment. H. 41; W. 42; Th. 25.
F: SM. K: MS, no inv. no.
References: unpublished.

SRM 21 (Pohorje)
Sarcophagus lid. H. 48; W. 243; D. 139.
References: unpublished.

SRM 22 (Gummern)
Sarcophagus lid. H. 57; W. 247; D. 132. Second half of the 4th c (Pop Lazić).
SRM 23 (Pohorje, Gummern?)
Sarcophagus lid. H: 89; W: 227; D: 121. Second half of the 4th c (Pop Lazić).

SRM 65 (Carrara)
Normal Corinthian capital of the Asiatic type. The kalathos has two rows of contiguous acanthus leaves as well as corner volutes and helices growing from the cauliculi. The abacus is moulded. H: 51; W: abacus 48–49; lower Ø 38. First half of the 4th c.
F: SM, the hippodrome, north range of the stand (?). K: MS, no inv. no.

SRM 69 (Carrara) (Fig. 12)
Normal Corinthian capital of the Asiatic type. The kalathos has two rows of contiguous acanthus leaves, above that the capital is broken off. H: 50; lower Ø 42–44. Mid 4th c.
References: unpublished.

SRM 75 (Paros ?)
Attic-Ionic base, fragment. It consists of a plinth, lower torus, lower fillet, scotia, upper fillet and upper torus. H: 19.5; W: plinth 47; upper Ø 36.5.
F: SM, Site 4? K: MS, no inv. no.
References: unpublished.

SRM 76 (Gummern)
Attic-Ionic base, fragment. It consists of a plinth, lower torus, lower fillet, scotia and a straight upper torus. H: 18.5; W: plinth 42.
F: SM, Site 4, trench I, northern section. K: MS; inv. no. 554/68.
References: unpublished.

SRM 77 (Carrara)
Attic-Ionic base, fragment. It consists of a plinth, lower torus, lower fillet, scotia, upper fillet and upper torus. H: 20; W: plinth 45.
F: SM, Site 4 (?). K: MS, no inv. no.
References: unpublished.

SRM 78 (Gummern)

SRM 79 (Pohorje)
Corinthian capital with plain leaves. The kalathos has a single row of plain contiguous leaves and stylized corner volutes. H: 31; W: abacus 30–34; diag. abacus 54.5; lower Ø 27. Mid 4th c.
References: Parović Pešikan 1969; Jeremić 1995, 143, Fig. 7.

SRM 80 (Pohorje)
Corinthian capital with plain leaves. The lower part of the kalathos is missing. The upper part has a row of plain leaves that are separated from the abacus by fully flattened corner volutes, while the central leaves touch the abacus flower directly. H: 18; W: abacus 33; diag. abacus 58. Mid 4th c.

SRM 81 (Pohorje/Gummern)
Corinthian capital with plain leaves. The kalathos has two rows of plain leaves. The upper part has a row of plain leaves that are separated from the abacus by fully flattened corner volutes, while the central leaves touch the abacus flower directly. H: 35; W: abacus 35; diag. abacus 61; lower Ø 26.5. Mid 4th c.
References: Parović Pešikan 1969, 267, sl. 1g; Jeremić 1995, 143, Fig. 6.

SRM 82 (Gummern)
Corinthian capital with plain leaves, fragment. The lower part of the kalathos has a single row of plain leaves, while the upper part is broken off. H: 28; lower Ø 35. Mid 4th c.

SRM 83 (Pohorje/Gummern)
Capital with plain leaves. The kalathos has two rows of plain leaves, of which the upper row almost touches the abacus underneath the corners and the rosettes. It is separated from the abacus by the flattened corner volutes and helices. H: 32; W: abacus 34; diag. abacus 58.5; lower Ø 28. Mid 4th c.
References: Parović-Pešikan 1969; Jeremić 1995, 143, Fig. 8.

SRM 86 (Carrara)
Veneering skirting-board with moulding, fragment.
L. 18. Mid 4th c (?).
References: unpublished.

SRM 87 (Gummern)
Veneering skirting-board with moulding, fragment.
L. 42.5. Early 4th c (?).
References: unpublished.

SRM 93 (Thasos ?)
Veneering skirting-board with moulding, fragment.
L. 23.5. Early 4th c (?).
References: unpublished.

SRM 94 (Thasos ?)
Veneering skirting-board with moulding, fragment.
L. 20. Early 4th c (?).
References: unpublished.

SRM 253 (Gummern)
Veneering skirting-board with moulding, fragment.
H. 16; W: 44.
References: unpublished.

Limestone
SRM 20 = SRM 44 (LT III)
Sarcophagus lid with double acroteria and sarcophagus receptacle with a tripartite front panel and portraits within medallions in each of two lateral fields. The central field is framed by a moulding above and below and Norico–Pannonian volutes on the left and right sides. H. 154; W. 211; D. 117. End of the 3rd c. (Dautova Ruševljan, 1983).
References: Garašanin M., Garašanin D. 1951, Tab. Xlb; Cermanović Kuzmanović 1965, 102, Tab. X/28; Dautova Ruševljan 1983, 17, Tab. 26.

SRM 26 (LT Ib)
Milestone, one side is damaged the upper part broken off. H. 123; D. 60. Dated to AD 230 (Mirković).

SRM 27 (LT Ib)
References: Cermanović Kuzmanović 1965, 102, Fig. 30; Dautova Ruševljan 1983, 16, Tab. 29/1.

SRM 28 (LT Ib)
Sarcophagus receptacle. H. 89; W. 90; D. 211. First half of the 3rd c. (Dautova Ruševljan, 1983).
References: Cermanović Kuzmanović 1965, 102, Tab. IX 30; Dautova Ruševljan 1983, 16, Tab. 29/1.

SRM 29 (LT IIa)
Medallion. H. 75; W. 42; Th. 19. Dated to the 3rd c. (Dautova Ruševljan, 1983).
References: Dautova Ruševljan 1983, 14, Tab. 7/3.

SRM 31 (LT IIb)
Stela, upper half. H. 130; W. 87; Th. 30. Dated to the 2nd c. (Dautova Ruševljan, 1983).

SRM 32 (LT IIa)
Stela, upper half. H. 92.5; W. 62; Th. 25. Dated to the 2nd c. (Dautova Ruševljan, 1983).
References: Dautova Ruševljan 1983, 13, Tab. 2/3.

SRM 33 (LT IIa)
Stela, lower half. H. 88; W. 71; Th. 23.
References: Vasić, Lesek, Milošević 1958, 45.

SRM 34 (LT III)
Sarcophagus receptacle with a tripartite front panel and a (damaged) portrait in each of two lateral fields. All fields have frames with mouldings on all four sides. H. 73; W. 197; D. 83. Mid 3rd c. (Dautova Ruševljan, 1983).
SRM 35 (LT Ic)

Stela, lower half with inscription. H. 105; W. 83; Th. 32. Dated to around AD 261 (Šašel).


References: Vasilici 1953, 147, no. 4; Šašel, 1961, 3–4; Šašel A., Šašel J. 1963, no. 271; Mirkovic 1971, 71–72, Pl. VIII.

SRM 36 (LT Ic)

Stela with a portrait of a man; broken into two parts, upper termination is missing. H. 169; W. 72; Th. 22.


References: Vasilici 1953, 147, no. 3; Šašel A., Šašel J. 1963, no. 273; Mirkovic 1971, 70, Pl. IV3; Dautova Ruševljanc 1983, 13, Tab. 2/4.

SRM 37 (LT Ic)

Stela with a portrait of a man; broken into two parts. H. 181; W. 52; Th. 22.


References: Vasilici 1953, 147, no. 1; Šašel J. 1963, no. 274; Mirkovic 1971, 71, Pl. V2; Dautova Ruševljanc 1983, 13, Tab. 2/6.

SRM 38 (LT IIb)

Ossuarium receptacle, undecorated. H. 44; W. 78; Th. 60.


References: unpublished.

SRM 39 (LT IIa)

Ossuarium lid with four acroteria, undecorated. H. 22; W. 78; D. 61.

F: SM ? K: MS, inv. no. A/1182

References: unpublished.

SRM 40 (LT III)

Sarcophagus lid with double corner acroteria, broken in two, left half is preserved. H. 40; W. 90; D. 92.

F: SM ? K: MS, inv. no. inv. no.

References: unpublished.

SRM 41 (LT IIa) (Fig. 4)

Sarcophagus receptacle with a roughly dressed surface, kymation on the lower edge of the front side, undecorated. H. 54; W. 174; D. 84.

F: SM ? K: MS, inv. no. inv. no.

References: unpublished.

SRM 42 (LT Ila)

Acroterial termination with a pair of lions with an altar in the centre. H. 48; W. 103; Th. 43. Dated to the 3rd c (Dautova Ruševljanc, 1983).


References: Brunšmid 1900, 194, Fig. 84; Dautova Ruševljanc 1983, 14, Tab. 6/6.

SRM 43 (LT Ia)

Altar dedicated to Mars with pulvins decorated with a rosette and two scrolls. H. 85.5; W. 39.5; D. 38.


References: Mirkovic 1994, 382, no. 40.

SRM 44 = SRM 20 (LT III)

SRM 45 (LT Ic)

Corinthian capital. It has a reduced structure: the kalathos has four contiguous acanthus leaves underneath the corner volutes. The latter grow from a stem placed centrally between two leaves. Helices and both rows of acanthus leaves are missing. H. 49.5–50.5; W. abacus 46; diag. abacus 74; lower Ø 37. Beginning of the 4th c.

F: SM, the hippodrome ? K: MS, inv. no. A/1198 or A/1190.

References: Popović, Ochsenschlager 1976, 170; Jeremić 1995, 133; Ertel 2005, 314, Fig. 5.

SRM 46 (LT Iib) (Fig. 5)

Corinthian capital (for description see SRM 45). H. 41.5; W. abacus 44; diag. abacus 78.5; lower Ø 38. Beginning of the 4th c.

F: SM, the hippodrome ? K: MS, no inv. no.


SRM 47 (LT Ic)

Normal Corinthian capital. The kalathos has two rows of independent acanthus leaves. Corner volutes and helices are flattened against the kalathos and stylized, they grow from organic cauliculi. Palmettes grow on top of the apices of the second-row leaves. The abacus is decorated with a double saw teeth ornament. H. 62; lower Ø 54. Trajanic date.


SRM 48 (LT Ic)
Normal Corinthian capital (for description see SRM 47). H. 46.5; W. abacus 61. Trajanic date.

SRM 49 (LT Ia)
Sarcophagus with a tripartite front panel, fragment. Part of the right field with the figure of Neptun is preserved. H. 38; W. 66; D. 14. End of the 3rd c. (Dautova Ruševljan 1983)
References: Dautova Ruševljan 1983, 17, Tab. 31/7.

SRM 50 (LT III)
Sarcophagus with a tripartite front panel, fragment. Part of the right field with the figure of Eros with a torch is preserved. H. 64; W. 35; Th. 9. Second half of the 3rd c. (Dautova Ruševljan, 1983).
F: SM, K: MS, no inv. no.
References: Dautova Ruševljan 1983, 17, Tab. 31/4.

SRM 51 (LT III)
Sarcophagus, fragment. The left lateral side with a lion figure is preserved. H. 71; W. 64; Th. 14. Second half of the 3rd c. (Dautova Ruševljan 1983).
F: SM, K: MS, no inv. no.
References: Dautova Ruševljan 1983, 17, Tab. 31/5.

SRM 52 (LT Ic)
Altar dedicated to Dis deabusque, damaged on the upper and lower part. H. 83; W. 35; D. 23.
References: Mirković 1971, 60.

SRM 53 (LT Ia)
Altar dedicated to Iuppiter. H. 92; W. 37; D. 34.
F: SM, ?. K: MS, no inv. no.
References: Mirković 1971, 64, no. 16.

SRM 54 (LT I(b)c)
Altar dedicated to Iuppiter. H. 98; W. 41; D. 36. Dated to AD 293.
References: Wiener Jahrbücher, 1831, 34–35, no. 389; Okruglic 1851, 409; Arneth 1862, 354; Römer 1866, 174; CIL III 3231; Mirković 1971, 64–65, Pl. III1.

SRM 55 (LT IIb)
Altar, upper part is damaged. H. 73; W. 44; D. 27.
References: Popović 1963, 70; Mirković 1971, 75, no. 50.

SRM 56 (LT IIa)
Altar dedicated to Iuppiter, with pulvins. H. 89; W. 37; D. 36.
References: Milošević, Milutinović 1958, 30, fig. 31; Šašel A., Šašel J., 1963, no. 269; Mirković 1971, 63–64, Pl. II3, no. 15.

SRM 57 (LT IIa)
Altar, upper part is missing. H. 71; W. 28; D. 29.
References: Okruglić 1851, 409; Arneth 1862, 354; Römer 1866, 174; CIL III 323; Brunšmid Kubitschek 1880, 124; Mirković 1971, 68–69, Pl. IV2, no. 28.

SRM 58 (LT IIa)
Altar dedicated to Neptun, upper and lower parts are damaged. H. 70; W. 45; D. 48.
F: Mačvanska Mitrovica, around 1884. K: MS, inv. no. 1205.
References: Jung 1884, 123; CIL III 10219; Mirković 1971, 67, Pl. III4, no. 24.

SRM 59 (LT IIb)
Altar dedicated to Iuppiter, with pulvins, upper part is damaged. H. 74; W. 37; D. 42.
References: CIL III 3230 + 1040; Mirković 1971, 63, Pl. II2, no. 13.

SRM 60 (LT Ib)
Normal Corinthian capital (for description see SRM 47). H. 63; W. abacus 59; lower Ø 53. Trajanic date.
References: Nikolajević 1969, 655, fig. 1; Jeremić 1995, 142, Fig. 2.

SRM 61 (LT IIb)
Altar, lower part. H. 47; W. 52; D. 28.
References: Mirković 1971, 80, Pl. XI2, no. 75.

SRM 62 (LT IIa)
Altar, lower part. H. 45.5; W. 37; D. 29.
F: SM, ?. K: MS, no inv. no.
References: unpublished
SRM 63 (LT Ic)
Altar dedicated to Silvanus Domesticus, upper part is damaged. H. 38; W. 40; D. 21.
F: SM ?. K: MS, no inv. no.
References: unpublished

SRM 64 (LT Ib)
Corinthian capital (for description see SRM 45). H. 43.5–45; W. abacus 47; diag. abacus 80; lower Ø 38.5. Beginning of the 4th c.
F: SM, the hippodrome ?. K: MS, no inv. no.

SRM 66 (LT Ic)
Acroterial termination with a pair of lions and an urn (?) with a bearded masculine face in the centre. H. 47; W. 90; Th. 31. Dated to the 2nd c. (Dautova Ruševljan 1983)
F: SM, Palanka. K: MS, inv. no. 11.
References: Gavela 1954–55, 45, fig. 2; Dautova Ruševljan 1983, 14, Tab. 5/2.

SRM 67 (LT Ia)
Corinthian capital (for description see SRM 45). The resting surface is broken off. H. 38; W. abacus 44–45; diag. abacus 77–78. Beginning of the 4th c.
F: SM, the hippodrome ?. K: MS, no inv. no.

SRM 68 (LT Ia)
Corinthian capital (for description see SRM 45). H. 50.5; W. abacus 46; diag. abacus 75; lower Ø 39. Beginning of the 4th c.
F: SM, southern city wall, the hippodrome, Trench 150 A, extension. K: MS, no inv. no.

SRM 70 (LT Ia)
Attic Ionic base. It consists of a square plinth, lower torus, scotia and upper torus. H. 19; W. plinth 44–46; upper Ø 34.5. Mid 4th c. (?).
References: unpublished.

SRM 71 (LT Ib)
Corinthian capital (for description see SRM 45). H. 41; lower Ø 38. Beginning of the 4th c.

SRM 72 (LT Ib)
Corinthian capital. It has a reduced structure: the kalathos has a single row of four independent acanthus leaves (the bottom folioles of the lower lobes are connected with a bead) and corner volutes, which grow from a stem placed centrally between two leaves. Helices and cauliculi are missing. H. 33; W. abacus 34; lower Ø 31.5–33. Probably 4th c.
References: unpublished.

SRM 73 (LT Iib)
Corinthian capital (for description see SRM 45). The resting surface is broken off. H. 17; W. abacus 22–23; diag. abacus 41.
F: unknown (the hippodrome ?). K: MS, no inv. no.
References: unpublished.

SRM 74 (LT Ic)
Attic Ionic base. It consists of a square plinth, lower torus, scotia and upper torus. H. 27.5; W. plinth 58.5; upper Ø 49.
References: unpublished.

SRM 141 (LT Iib)
Altar dedicated to Iuppiter. H. 105; W. 49; D. 22. Dated to AD 223 (Mirković).

SRM 142 (LT Ia)
References: Mirković 1994, 378, no. 33.

SRM 143 (LT Ic)
Altar dedicated to Iuppiter. H. 119; W. 53; D. 47. Dated by M. Mirković to AD 230.

SRM 144 (LT Ia)
Altar dedicated to Mithra. H. 143.5; W. 44.5; D. 49. F: SM, Stari Šor, 1981. K: MS, inv. no. 5078.

SRM 145 (LT Ia)
References: Mirković 1998, 44, note 5, no. 2.
SRM 146 (LT IIb)
Stela with a portrait of a man and a woman and acroteria with a pair of lions; the lower part with the inscription is broken away. H. 195; W. 116; Th. 27. Dated to the 2nd c. (Dautova Ruševljan).
References: Dautova Ruševljan 1983, 13, Tab. 3/3.

SRM 147 (LT IIa)
Stela with the head of Medusa within a wreath above the inscription field; left side is damaged and lower part broken away. H. 80; W. 70; Th. 20. Dated by V. Dautova Ruševljan to the second half of the 2nd c.

SRM 148 (LT Ic)
Altar dedicated to Iuppiter, with pulvins. H. 96; W. 49.5; D. 45.
References: Mirković 1994, 379, no. 35.

SRM 149 (LT Ic)
Altar dedicated to Iuppiter. H. 82; W. 41; D. 32. Dated to AD 228 (Mirković).

SRM 150 (LT IIa)
Altar dedicated to Iuppiter. H. 89; W. 46; D. 36. Dated to AD 189 (Mirković).
References: Mirković 1994, 361, no. 4.

SRM 151 (LT IIa)
Altar dedicated to Iuppiter. H. 89; W. 42; D. 27.5. Dated to AD 206 (Mirković).

SRM 152 (LT Ic)
Altar dedicated to Iuppiter. H. 86; W. 43; D. 40. Mid 2nd c. at the earliest (Mirković).
References: Mirković 1994, 375, no. 27.

SRM 153 (LT I b)
References: Mirković 1994, 381, no. 39.

SRM 154 (LT IIa)
Altar dedicated to Iuppiter. H. 97; W. 57; D. 35. Dated to AD 205 (Mirković).
References: Mirković 1994, 366, no. 11.

SRM 155 (LT IIa)
References: Mirković 1994, 393, no. 62.

SRM 156 (LT Ic)
Stela with the portrait of two men, broken into three parts. H. 84; W. 59; Th. 25. Dated to the 2nd c. (Dautova Ruševljan, 1983).
References: Vasić 1953, 147, no. 2; Šašel 1960, 240; Šašel 1961, ref. 3; Šašel A., Šašel J. 1963, no. 271; Mirković 1971, 73, Pl. VIII1; Dautova Ruševljan 1983, 13, Tab. 2/1.

SRM 157 (LT IIa)
Milestone, upper and lower parts are broken off. H. 62; D. 48. Dated to AD 197–198 (Mirkovic).
References: Mirković 2006, 135–136, fig.

SRM 158 (LT I b)
Altar dedicated to Iuppiter, with pulvins. H. 120; W. 66; D. 51. Dated to around AD 164–166 (Mirkovic).
References: Mirković 1994, 384, no. 44.

SRM 159 (LT III)
Medallion with two horsemen. H. 84; W. 59; Th. 25. Dated to the 3rd c. (Dautova Ruševljan).
References: Dautova Ruševljan 1983, 14, Tab. 7/1.

SRM 169 (Limestone, neogene)
Weight with a concave hole on one side, fragment. H. 17; Ø max. 25; Weight 7.18 kg (originally ca 50 librae).
Jeremić 1991, 78–83, Fig. 8.

SRM 185 (LT III)
Plain shaft, fragment. Lower part with the apophyge. H. 19.5; Ø 21.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.
SRM 195 (Limestone, white)
Plain shaft, fragment. H. 16; Ø 15.
References: unpublished.

SRM 207 (LT Ic)
Corinthian capital (?), fragment. Only a small fragment of an acanthus leaf is preserved. H. 10.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.

SRM 211 (LT IIa)
Console with pulvins and an acanthus leaf, fragment. H. 18; W. 17.5.
References: unpublished.

SRM 212 (LT Ic)
Corinthian capital, fragment. Corner of the abacus with the tips of the volutes and leaf is preserved. H. 17; W. 23.
References: unpublished.

SRM 213 (LT III)
Corinthian capital, fragment. Corner with the tips of the volutes and leaf is preserved. H. 12.5; W. 13.5.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.

SRM 214 (LT IIa)
Cornice (?), fragment. Plant decoration (?) in relief. H. 12; W. 32.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.

SRM 216 (LT Ic)
Corinthian capital (for description see SRM 45), fragment. H. 18.
References: unpublished.

SRM 217 (LT III)
Square capital / cornice, fragment. H. 11; W. 16.5.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.

SRM 218 (LT III)
Plain shaft, fragment. Upper part with astragalus and fillet. H. 9; upper Ø 20.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.

SRM 219 (LT III)
Spirally fluted shaft, fragment. H. 11; Ø 20.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.

SRM 220 (LT III)
Attic Ionic base, fragment. It consists of the lower torus, scotia and upper torus, the plinth is missing. H. 13; Ø scotia. 25.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.

SRM 221 (LT III)
Fluted shaft, fragment. H. 20.7; Ø 20.
F: SM, Site 47. K: MS, no inv. no.
References: unpublished.

SRM 222 (LT III)
References: unpublished.

SRM 223 (LT IIb)
Veneering skirting-board with moulding, fragment. H. 8.3; L. 22.5.
References: unpublished.

SRM 224 (LT IIa)
Cornice (?), fragment. Decorated with egg-and-dart and plant motifs. H. 15.5; W. 15.5.
References: unpublished.

SRM 226 (LT III)
Slab, fragment. Decorated with a human head in relief. H. 19.5; Th. 8.5.
References: unpublished.

SRM 227 (LT IIb)
Plain shaft, fragment. Upper part with astragalus and fillet. H. 19; Ø 29.
References: unpublished.

SRM 228 (LT IIb)
Square Attic Ionic base. It consists of a plinth, lower torus, scotia and upper torus. H. 21.5; plinth 28.5 x 29.2.
SRM 259 (LT IIb)
Small console. Decorated with an acanthus leaf on the front and S-shaped volutes on both sides.
References: unpublished.

SRM 265 (LT Ia)
Block. H. 28; W. 56; L. 60.
References: unpublished.

SRM 268 (LT Ia)
Large console, fragment. Decorated with acanthus leaves in relief. H. 21.5; W. 48; L. 30.
References: unpublished.

SRM 270 (LT IIb)
Drainage cover. W. 69; L. 67; Th. 17.5.
References: unpublished.

SRM 271 (Limestone)
Block. Decorated with palmettes in corners. H. 78; W. 97; Th. 16.
References: unpublished.

SRM 274 (LT Ib)
Corinthian capital (for description see SRM 45). H. 40.
F: unknown (the hippodrome ?). K: MS, no inv. no.
References: unpublished.

SRM 275 (LT III)
Corinime console, fragment. Decorated with an acanthus leaf and spirals on the sides. H. 29.5; W. 29; L. 47.
References: unpublished.

SRM 276 (LT IIb)
Corinime, fragment. H. 14.5; W. 33; L.64.
References: unpublished.

SRM 278 (LT Ia)
Base. H. 23.5; W. plinth 42; upper Ø 31.
References: unpublished.

SRM 281 (LT Ia)
Archivolt. The front is decorated with a wreath (of oak leaves) with double teniae, inside which is a christogram. The arch is decorated with a leaf garland with its ribbons tied in the centre, whereby the leaves run in opposite directions each side of the centre. The arch is further decorated with bead-and-reel and leaf-and-dart towards the front. W. 32; L. 66; Th. 47. Mid 4th c.
F: SM, close to the Imperial Palace. K: MS, no inv. no.
References: Jeremić 1993, 196, no. 34; Jeremić 1995, 145, Fig. 32.

SRM 282 (LT IIb) (Fig. 9)
Large console, fragment. Decorated with an acanthus leaf on the front and spirals on the sides. H. 28; L. 45.5; Th. 46.
F: unknown. K: MS no inv. no.
References: unpublished.

SRM 284 (LT III)
Attic Ionic base. It consists of a plinth, lower torus, scotia and upper torus. H. 21; W. plinth 51; upper Ø 40.
References: unpublished.

SRM 286 (LT IIa)
Block with a large round hole with horizontally carved sides and a small square hole in the middle of the latter. H. 26; W. 60.5; L. 53.
References: unpublished.

SRM 287 (LT Ic)
Attic Ionic base. It consists of a plinth, lower torus, scotia and upper torus. H. 26; upper Ø 37.
References: unpublished.

SRM 288 (LT IIb)
Plain shaft, fragment. Decorated with spiralling ivy branches in relief. H. 24; Ø 70.
References: unpublished.

SRM 289 (LT Ia)
Corinthian capital (for description see SRM 45). The lower half is broken off. H. 17.5; W abacus. 32.
F: unknown (the hippodrome ?). K: MS, no inv. no.
References: unpublished.
SRM 290 (LT IIa)
Attic Ionic base. It consists of a plinth, lower torus and part of scotia, upper torus is missing. H. 16; Ø torus. 70.
F: unknown. K: MS.
References: unpublished, no inv. no.

SRM 292 (LT III)
Vertical slab with a plain terminal pilaster, fragment. Bedding surface may hold holes for statues. H. 41.5; W. 56.5; Th. 25.
References: unpublished.

SRM 299 (LT IIb)
Shaft, fragment. H. 10; W. 15; Th. 13.
F: SM, Site 1a. K: MS, inv. no. 57/60.
References: unpublished.

SRM 300 (LT IIa) (Fig. 6)
Normal Corinthian pilaster capital, Asiatic type. The kalathos has two rows of contiguous acanthus leaves, corner volutes and helices, which grow from cauliculi. H. 30; W abacus. 40.
References: unpublished.

SRM 301 (LT IIb)
Stela, fragment of the left part of the inscription field with a half-column. H. 55; W. 49; Th. 24.
References: Mirkovic 1971, 76–77, Pl. X2, no. 56.

SRM 302 (LT IIa)
Milestone, upper and lower parts are broken off. H. 69; Ø 44. Dated to AD 202 (Dušanić) and after AD 198 (Mirković).

SRM 303 (LT III)
Cornice, fragments. The moulding has a double break. H. 23; W. 76; L. 67.
References: unpublished.

SRM 293 (Sandstone)
Block. W. 36; L. 54; D. 23.
References: Unpublished.

SRM 206 (Volcanoclastic rock of andesitic composition, green)
Small basin. H. 13; W. 19.
References: Unpublished.
ABBREVIATIONS:

CIL ........................................... Corpus Inscriptionum Latinarum
CSIR ......................................... Corpus Signorum Imperii Romani
UEL ............................................. http://www.ubi-erat-lupa.org/

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Стоње употребе камена у римским градовима. Извори, транспорт, производи и клијенти. Пример Сирмијум. ПРВИ ИЗВЕШТАЈ

Истраживачки пројекат у сарадњи Филозофског факултета у Љубљани, Археолошког института у Београду и Музеја Срема у Сремској Митровици у 2006. години обухватао је анализе и документисање камених споменика који се налазе у Музеју Срема. Било је документовано и фотографисано 1324 предмета (лапидариј 127, депо 1197) и преузето 322 узорака за анализе.

Анализе кречњака од којег су били направљени сирмијски споменици показале су бар два извора тога материјала: литотип I и литотип III несумњиво долазе из каменолома Дардагани који лежи на излазу из долине реке Сапне, ле- ве притоке Дрине изнад Зворника, док је литотип II дошао вероватно негде из ширег подручја Паноније уз Дунав. Бели мермер долазио је у Сирмијум од краја 1. до 3. столећа пре свега из Источних Алпа (каменоломи Gummerin код Villacha и Погооре), а од краја 3. ст. даље из Медитерана (Luni, Pares, Dokimeion, Proconnesos). Мермер у боји био је увозен из империјалних и других каменолома широм Медитерана (Египат, Тунис, Италија, Мала Азија, Грчка) а у Сирмијуму је везан пре свега за империјалну архитектуру.

РЕЗИМЕ:

БОЈАН ЂУРИЋ, Филозофски факултет, Љубљана
ЈАСМИНА ДАВИДОВИЋ, Музеј Срена, Сремска Митровица
АНДРЕЈА МАВЕР, Љубљана
ХАРАЛД В. МИЛЕР, Институт за примењену геолошку, Беч

Употреба камена у римским градовима. Извори, транспорт, производи и клијенти. Пример Сирмијум. Први извештај