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Marbles, Quarries and Workshops on the Highlands of Northern Macedonia

Introduction

The Roman province of Macedonia II or *Salutaris*, as it was also called, came about during the fourth century A.D. in the aftermath of Diocletian's reform¹. The capital city was Stobi², and most of the Roman province is today contained within the Republic of Macedonia (fig. 1). Geographically, Macedonia II may be described as landlocked highlands in the centre of the Balkan Peninsula. Her ancient marbles, quarries and workshops have as yet received little attention, but whilst Macedonia was part of Yugoslavia, some beautiful Late Antique carvings from the Episcopal Basilica at Stobi were brought to Belgrade, where they are now kept at the National Museum. The latter has been closed since 2003, but some capitals from Stobi were exhibited at Bonn in 2010, where they attracted our attention. We followed their trail, first to Serbia later in 2010 and then to Macedonia in 2011. Thanks to the kind support of various colleagues in both countries we were able to sample the carvings, identify a matching quarry at Sivec in central Macedonia and add a major piece to the puzzle of Late Antique stonemasonry³.

As a ›by-product‹ we also sampled a number of other artefacts from various locations in Macedonia, as well as one other quarry. This served two additional purposes: Firstly we were able to establish that the quarry at Sivec had already been exploited during the Roman Imperial period; the products attest to local workmanship of some standing, but the tradition may have been discontinued on the eve of Late Antiquity during the ›crisis of the third century‹. Secondly we investigated which other local and imported marbles were used in the region. This allowed us to contextualize Sivec and to understand what part it played during the Roman Imperial period and how exploitation came to be revived in Late Antiquity. For these purposes we chose to sample artefacts that are either of particular quality and art historical significance or representative of a certain type of marble and its usage.

As a result we are now able to present a wide range of marbles, quarries and workshops in the region from the Classical period through to Late Antiquity. This geographical and chronological breadth did not allow for more than a relatively small, ›informal sample‹⁴, and there were surely many more types of marble employed in the survey area than we happened to chance upon. Future research will undoubtedly refine and possibly correct the scenario that we propose here for the exploitation and use of marble in the region.

The following discussion commences with the archaeometric evidence and continues with a number of sections on when and where the various marbles in our sample were quarried and used. The order is therefore chronological as well as geographical; it starts with the import of Pentelic marble in the Classical

1 Babamova 2005, 24–27; Popović 2010, 232–234 (bibliography).

2 Wiseman 1984a.

3 In Serbia Vujadin Ivanišević from the Archaeological Institute at Belgrade was our host and mentor and supplied the illustrations of cat. 41 and 44; we would also like to thank the director Tatjana Cvjetičanin for the permission to work at the National Museum in Belgrade and the curator and sculptor Branislav Savić for pointing us to Sivec and supplying us with a first quarry sample. In Macedonia Slavica Babamova from the National Museum at Skopje made her rich collection available for our research, helped us to find the quarries at Sivec and Pletvar, shared her insides into the historical topography of the region, and contributed her understanding of the inscriptions cat. 3, 6–8 and 23 to this article. Silvana Blaževska, the director of the excavations at Stobi, provided generous access to the excavation site and to some most significant recent finds. We would also like to thank our various employers, who supported us with research leave and travel grants. In addition, the German Archaeological Institute at Istanbul under the directorship of Felix Pirson also paid for the archaeometrical analyses of the artefacts.

4 Orton 2000, 2.



Fig. 1 Survey area and find spots

period and continues with that of Thasian marble, which is only attested in the lowlands to the southeast of the survey area. Next come two sections on the newly discovered quarry at Sivec, its description and how it provided for the Roman poleis in south-western Macedonia. This is followed by eight sections on Roman and Late Antique Stobi, the provincial capital and both the largest ancient city and the biggest modern excavation in the survey area, with the greatest variety of marbles, both local and imported, the study of which has required the highest number of samples. A catalogue at the end of this article presents the artefacts in roughly the same order that they are discussed in the text.

Archaeometric Analyses

Geologically speaking, what ancient sources and modern archaeologists call marble is a metamorphic rock that consists mainly either of calcite or of dolomite. The two materials are easily distinguishable with a drop of acid, to which they react differently. Dolomites are comparatively rare among ancient marbles, and when they occur, they may conveniently be separated from the calcites and discussed on their own.

Each of the two groups can be subdivided further by more sophisticated analyses and their statistical evaluation. The more criteria are analysed, the

better the results, as the various marbles can be described and distinguished more precisely. The analyses are done in laboratories and require a sample of each artefact and at least a dozen samples per quarry. Some methods like isotopic analysis require little material, but wherever possible we took a sugar cube size sample in order to conduct all other analyses and a statistical evaluation, too.

The analysis of stable isotopes, i. e. C- and O-isotopes, is the standard method for tracing the origin of marbles, and a large amount of comparable data is available⁵. In our case the analysis was conducted in the laboratory of the Department of Applied Geological Sciences and Geophysics of the University of Leoben/Austria. The stable isotope composition for carbon and oxygen was analysed with a ThermoFisher DELTAV mass spectrometer (ThermoFisher, Bremen, Germany) that was connected online to a ThermoFisher GasBench II and a CTC Combi-Pal autosampler. Approximately 0,2 mg of each sample was finely ground and then decomposed with H₃PO₄ conc. in a He-flushed atmosphere that was heated to 70°C for calcites and 90°C for dolomites. The results are reported relative to the PDB standard for both $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$. Long-term precision turned out to be 0,06 ‰ for oxygen and 0,05 ‰ for carbon respectively.

In addition, trace elements were also analysed, and this chemical analysis was effected by atomic absorption spectroscopy (AAS). 0,2 g of each sample was again finely ground and in this case digested by hot HNO₃. Since subordinately occurring silicatic trace minerals do not dissolve, the results refer to the carbonate fraction alone. Because of their relatively homogeneous distribution only elements that are incorporated into the carbonate lattice were analysed, that is Mg, Fe, Mn, Sr, and Zn.

Finally, the solute chemistry, i. e. inclusion fluids, was analysed, too⁶. For this purpose we produced mineral separates with grain sizes between 0,5 and 2 mm and removed surface impurities with diluted HNO₃. The samples were then washed in double-distilled water (DDW) twice a day for five days. Afterwards 1 g of each sample was ground with 5 ml of Milli Q-water to release the fluids that are contained in the inclusions. The resulting slurry of ground sample material and DDW was filtered through 0,2 mm-nylon. Finally the leachates were analysed for Cl⁻, Br⁻, F⁻ and I⁻ with ion chromatography (Dionex 3500) and external suppression, as well as for Na⁺, K⁺ and Li⁺ with a Dionex 120 system and electrochemical suppression. Detection limits for Cl, Br, Na, K, and Li were 10, 0.2, 10, 30, 30, and 0.1 ppb respectively. All analyses were well above the detection limits. The analytical precision was usually better than 10 % (2s error) for Cl and Br, about 10 % (2s) for K and Na at low concentrations of less than 200 to 300 ppb, and about 5 % (2s) above these values.

Dolomites

Table 1 lists all analysed parameters, figure 2 plots the isotopic composition, and figure 3 visualises the two most important factors that have resulted from the statistical evaluation of all criteria. The Macedonian artefacts and quarry are compared to two other dolomites, the well-known marble from the island of Thasos and a fine-grained dolomite from Belevi near Ephesus in Asia Minor. All data is provided by original samples and analyses⁷. Otherwise information on dolomitic marbles used in antiquity is rare⁸. In figures 2 and 3, artefacts are represented by dots and quarry samples are shown as 90 % ellipses, which means that 90 % of the quarry samples plot within the ellipse.

5 Cf. Attanasio et al. 2006.

6 For a more detailed description of this new method of marble provenance determination see Grillo – Prochaska 2010.

7 The data base has been amassed by W. Prochaska at the the Department of Applied Geological Sciences and Geophysics of the University of Leoben/Austria. For Thasos cf. Herrman Jr. – Newman 1999; Barbin et al. 2002a; Barbin et al. 2002b; Dotsika et al. 2010; for Belevi cf. Grillo – Prochaska 2010.

8 Cf. Prochaska 2013.

Cat.	Sample	DS	MgCO ₃	Fe	Mn	Sr	Li/Na	Cl/Na	K/Na	Br/Na	I/Na	SO ₄ /Na	δ ¹⁸ O	δ ¹³ C
				ppm	ppm	ppm							(PDB)	(PDB)
Dolomitic marbles from Thasos														
3	SK23	5094	44,94	102	26	30	0,9	1073,8	329,1	3,3	2,5	828,1	-3,78	3,64
4	SK21	2200	44,55	118	21	42	1,9	1118,9	356,8	3,1	1,5	6152,3	-4,02	3,50
5	SK17	2692	44,72	183	43	35	1,1	1181,4	522,2	3,6	2,2	655,1	-4,33	3,66
Dolomitic marbles from Sivec														
6	SK7	4640	42,48	73	12	98	0,6	1140,5	345,4	4,9	1,6	50000,0	-2,42	2,35
7	SK10	4110	45,45	127	14	45	0,7	1135,1	434,3	3,1	2,0	501,6	-2,19	3,01
8	SK24	4637	45,12	93	12	43	0,5	1083,9	305,5	3,7	1,4	2094,9	-0,70	2,85
9	SK20	3211	45,36	83	15	50	0,9	1213,8	234,6	3,6	1,7	1941,3	-1,77	2,68
10	SK18	2549	44,53	115	15	58	0,5	1134,2	432,8	3,7	1,6	736,6	-3,26	2,83
11	SK8	11752	45,69	147	12	50	0,2	1384,7	357,1	1,9	0,7	506,4	-0,09	3,11
12	SK12	4947	44,20	122	14	65	0,4	1096,4	294,1	4,0	1,7	522,6	-2,21	2,44
13	ST19	n.a.	44,37	128	13	45	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-0,44	2,68
14	ST14	4200	44,79	112	14	42	0,6	1175,9	203,3	4,0	1,8	668,6	-1,13	2,49
15	ST12	3394	44,96	115	13	48	0,8	1086,8	189,7	4,7	2,2	880,9	-1,55	2,94
16	ST13	4405	45,78	105	8	50	0,9	1232,8	248,2	3,3	2,4	428,8	-1,54	2,80
17	SK9	3970	45,77	83	14	45	0,6	1161,9	296,7	4,5	1,6	838,5	-1,20	2,70
37	ST5	6777	45,22	195	13	52	0,9	1080,9	258,1	4,1	2,3	568,9	-1,07	3,02
38	ST6	2903	46,41	82	9	50	1,3	995,5	260,1	3,0	2,1	450,0	-0,60	2,86
39	SK5	2268	45,87	182	14	45	0,8	1310,9	384,5	3,9	0,9	877,2	-1,44	2,98
40	ST11	3261	45,30	72	9	47	0,6	1104,3	252,8	5,3	2,7	386,1	-0,39	2,82
41	Stobi3	5059	44,69	166	15	51	0,7	1303,1	534,7	13,8	1,9	739,6	-0,89	3,21
42	SK1	2597	44,61	127	19	47	0,3	1514,1	500,3	6,1	1,6	26965,0	-1,42	2,95
43	SK6	1668	45,80	157	27	52	1,4	1218,8	491,7	5,0	1,5	2345,5	-2,13	2,96
44	Stobi2	5738	44,88	115	16	49	0,2	544,8	150,0	3,8	0,5	240,1	-0,16	2,80
45	Stobi1	4581	43,88	121	17	44	0,4	1431,7	315,7	11,5	2,1	534,6	-0,13	3,21
46	ST15	3809	45,17	122	10	35	0,5	1138,5	191,0	3,6	2,3	498,1	-0,87	2,92
49	SK3	3111	45,67	130	11	47	0,6	1223,0	337,3	3,3	1,1	552,3	-1,90	2,86
51	SK19	2591	45,65	137	17	52	0,6	1048,4	243,2	5,3	1,4	1420,0	-1,36	2,87
52	SK15	7498	45,48	97	17	42	0,4	1252,1	405,9	1,9	0,8	186,2	-1,09	3,15

Tab. 1 Results of the archaeometric analysis, dolomitic marbles from Thasos and Sivec

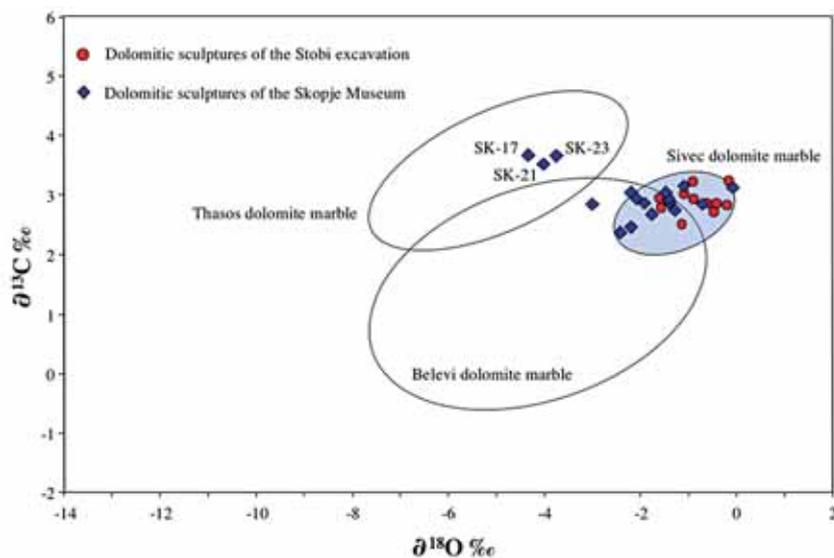


Fig. 2 Isotope analysis of the dolomite quarry at Sivec and the dolomite samples

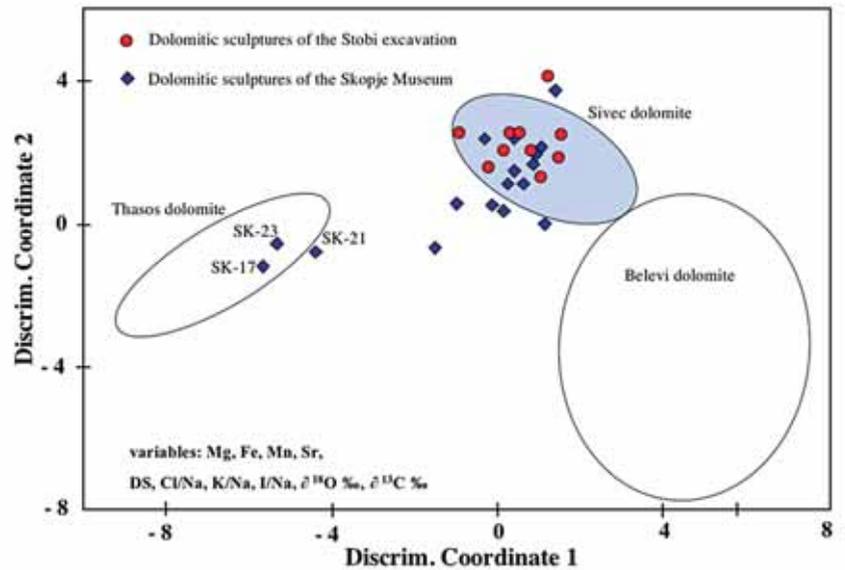
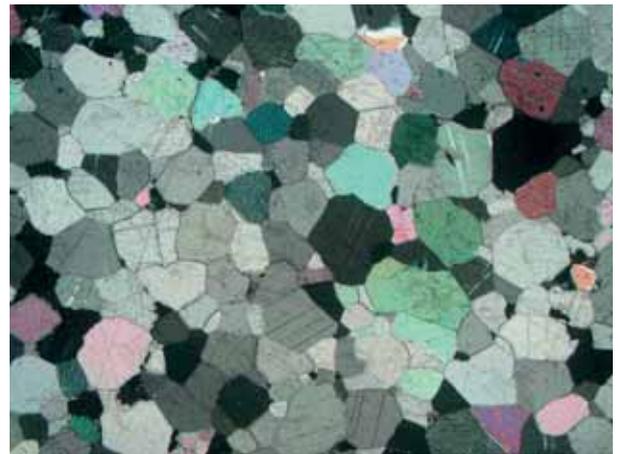


Fig. 3 Statistical analysis of the dolomite quarry at Sivec and the dolomite samples



4

Fig. 4 Cat. 6, heteroblastic fabric with curved grain-boundaries of large not twinned dolomite crystals (Thassos dolomite). Microfoto in polarized light, length of image 7 mm



5

Fig. 5 Cat. 37, polygonal isogranular fabric of a perfectly recrystallized dolomitic marble without any silicate impurities (Sivec dolomite)

The interpretation of the chemical and isotopic composition of the dolomitic samples is unambiguous and straightforward: Three samples, cat. 3–5, plot within the quarry field of Thasian dolomites. The Thasian provenance of the samples is further corroborated by their coarse-grained texture that is typical for the quarries at Saliara and Cape Vathy on Thasos (fig. 4)⁹. All other dolomitic artefacts are made of fine-grained marble with a granoblastic texture that is typical for the Macedonian quarry at Sivec (fig. 5). As can be seen in figures 2 and 3, the analysed artefacts coincide well with the compositional field of the quarry samples from Sivec. For a geological description of the quarry see below.

Calcites

Table 2 lists all analysed parameters, figure 6 plots the isotopic composition, and figure 7 visualises the two most important factors that have resulted from the statistical evaluation of all criteria. The projection points of the samples scatter appreciably and show that their composition varies widely. However,

⁹ Cf. above n. 7.

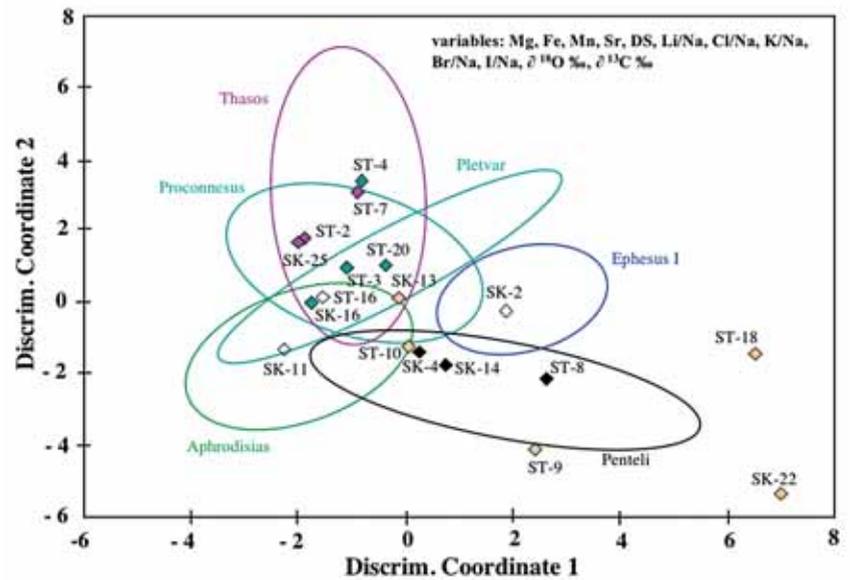
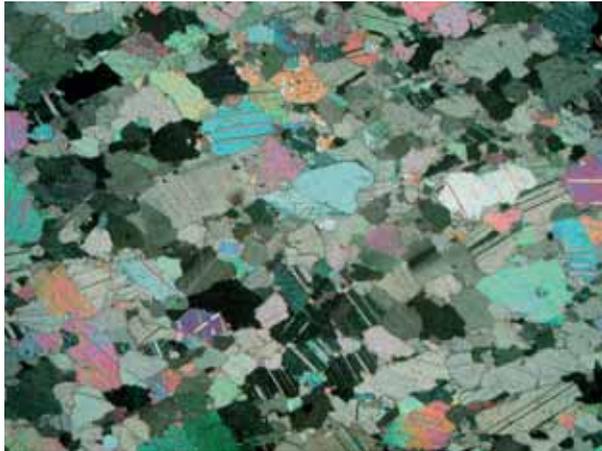
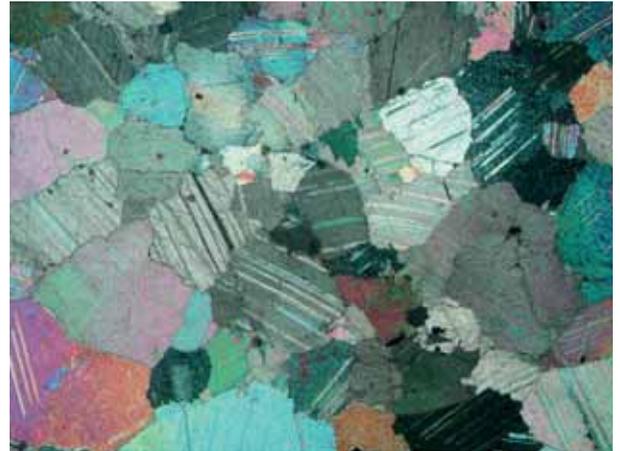


Fig. 7 Statistical analysis of the calcite quarry at Pletvar and the calcite samples



8

Fig. 8 Cat. 4, equigranular; slightly lobate grain-boundaries; faint schistosity. Silicate impurities are quartz and mica (Penteli)



9

Fig. 9 Cat. 30, heteroblastic fabric of twinned calcite crystals (Pletvar)

considering all investigated chemical parameters and also the macroscopic and microscopic textural features, a grouping and an assignment of most of the artefacts to a given provenance can be achieved.

Cat. 1, 20 and 48 are white fine-grained calcitic marbles with irregular light-grey patches, which is rare and points to Penteli in Greece¹⁰; characteristically, a moderate content of mica minerals can be observed macroscopically as well as under the microscope (fig. 8). Chemically these samples are characterized by high Fe and Mn numbers and an isotope composition that also matches fairly well with Pentelic marbles.

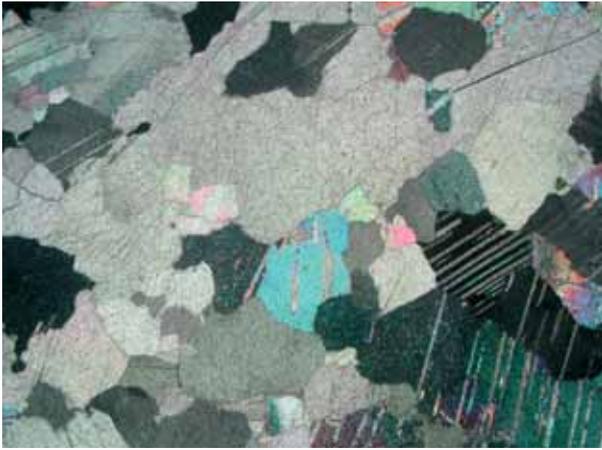
Cat. 28–32 form a group of white/greyish medium- to coarse-grained calcites (fig. 9). They can be associated with a second Macedonian quarry at Pletvar that is described below in a section of its own. The material largely matches the isotopic and chemical parameters of Proconnesian marbles¹¹, and to date it is impossible to distinguish the two sources archaeometrically.

Cat. 33–35, another set of white medium- to coarse-grained samples, are characterized by a light O-isotope-composition and distinctly different from most ancient marbles, but the isotopes and also the chemical parameters compare closely to Thasian calcite (fig. 10)¹². Cat. 21–23, three more samples of medium-

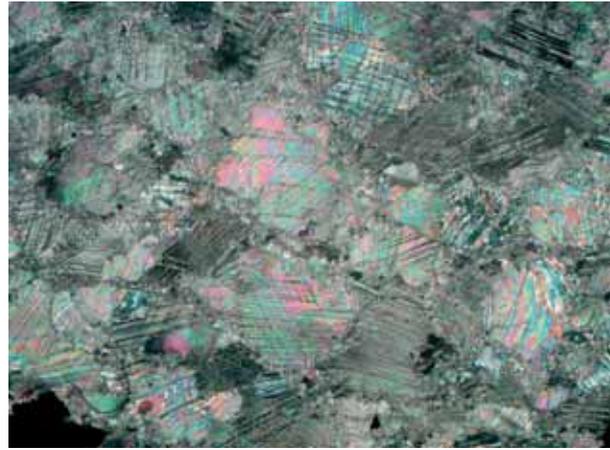
10 Cf. Pike 2009.

11 Cf. Attanasio et al. 2008.

12 Cf. Moens et al. 1988b; Attanasio et al. 2006.



10



11

to coarse-grained white calcites, cannot be attributed to any of the above-mentioned clusters. Instead, an origin from Asia Minor is archaeometrically feasible as the samples compare to quarries at Aphrodisias and Ephesus¹³.

Cat. 2 and 24–27 consist of fine-grained greyish carbonate-rocks and exhibit a microtexture of micritic limestone with few sparitic components and low metamorphic overprint. Typically, deformed sparitic clasts of calcite occur in a fine-grained groundmass (fig. 11). The chemical and isotopic numbers of these samples scatter appreciably, which may indicate different quarries. However, the typical uniform texture assigns these samples to carbonatic units most probably of the Vardar Zone in Macedonia. The Vardar Zone is an approximately north-south trending unit comprising volcanic rocks and sedimentary components with carbonatic sequences¹⁴. Most of the latter underwent a low-grade metamorphism, and consequently the carbonate rocks are at the transition between limestone and low metamorphic marble.

Cat. 19, a small yellow head of Infant Dionysus or putto, could only be analysed for isotopes, because the available sample was too small for the application of any other analytical method, but it is still possible to compare the isotopic data with that from other yellow marbles¹⁵. It transpires that the isotopic data is sufficient to show that the material of the yellow head is markedly different from other yellow marbles (fig. 6), and no match has yet been found.

Classical and Hellenistic Grave Stelae from Pentelic Calcite and Local Limestone (cat. 1. 2)

The earliest two pieces sampled are grave stelae from the Classical and Late Hellenistic periods. The Classical stela was found at Skopje fortress above the modern capital of Macedonia (cat. 1). The relief had been re-used, its original context is uncertain, and nothing is known of Classical period settlement in Skopje or its surrounding area. Scupi, the ancient predecessor of Skopje, came to prominence only from the second century B.C. onwards as the capital of Dardania and a Roman legionary colony¹⁶, but the relief was dated by Bergemann to between 360–330 B.C.¹⁷, although its fragmentary condition makes precise chronological attribution particularly difficult. Clairmont noticed an ›Attic treatment‹ to the light chisel marks observable on the right hand side of the relief and suggested that the piece was of Attic workmanship specially imported into the area for an important client¹⁸. Another local parallel is per-

Fig. 10 Cat. 35, coarse-grained-heteroblastic fabric with curved to sutured grain-boundaries (light O-isotopes)

Fig. 11 Cat. 2, slightly deformed calcite clasts in a very fine-grained groundmass (Vardar Zone)

¹³ Cf. Grillo-Prochaska 2010.

¹⁴ Cf. Aftalion – Yarwood 1976; Nance 1981; Mountrakis 1986.

¹⁵ For data from ›Giallo antico‹ at Chemtou in Tunisia see Herz 1987. Antonelli et al. 2010 report some isotope data on yellow marbles from Algeria (yellow of Kristel).

¹⁶ Birley 1986.

¹⁷ Bergemann 1997, 173 no. 561.

¹⁸ Clairmont 1993, 221 f. no. 3. 366 c.

haps provided by a grave stele from Isar-Marvinci in the lowlands further south along the Axios/Vardar River¹⁹.

Cat. 1 appears to be of Pentelic marble, and if Clairmont's observations are correct it seems that it was imported in a finished condition. Pentelic marbles from Attica were later imported in a finished state to Thessaloniki²⁰, and it is possible that the Classical stele is an early example of a piece transported, via the Axios/Vardar River, to meet the needs of a local elite patron in the Macedonian highlands. Riverine transport was cheaper than movement over land²¹, and the Axios/Vardar River has been described as »the only good line of communication in the region«²². However, there are various rapids at the Djevdjelija and Demir Kapija canyons that separate the northern highlands from the southern lowlands and deter movement up-stream²³. The desire to overcome such obstacles and import Pentelic marble emphasises the high value that was apparently attributed to this monument.

In contrast, the Late Hellenistic grave stele consists of local limestone and appears to have been sculpted by a local workshop (cat. 2). It was found at Heraclea Lyncestis near Bitola in south-western Macedonia. Heraclea was a Greek polis since its foundation by Philipp II of Macedon (359–336 B.C.), who conquered Lyncestis and incorporated the area into his kingdom. The stele has been re-cut, again indicating later re-use. It is typical of second/first century B.C. Macedonian banquet scenes, but more precise dating is unfeasible given the condition of the piece. The relief appears to follow trends in composition and figure type found in contemporary production in Beroia²⁴. However, stylistic details such as the rendering of the horse's mane are distinct from the norms of what has been identified as Beroian output²⁵. The fact that the composition closely corresponds to Beroian pieces while the rendering of details is different may indicate that this was produced by a local workshop based on Beroian examples.

Thasian Dolomite from a Roman Polis at Isar-Marvinci (cat. 3–5)

Three samples come from south-eastern Macedonia to the south of the Demir Kapija Gorge, through which the Axios/Vardar River leaves the highlands and reaches the plain of Thessaloniki (fig. 1). All three samples are of Thasian dolomite, which is not otherwise attested in our survey. The samples represent two artefacts from Isar-Marvinci and a surface find from the area of Dojran-Gevgelija: a fragment of a Latin inscription in honor of the emperor Nero (cat. 3), a grave medallion probably produced in the earlier years of Hadrian's reign (cat. 4)²⁶ and a votive stele dedicated to Heros epekoos, dated according to the Macedonian calendar to the year A.D. 168 (cat. 5).

Isar-Marvinci was the most important settlement in the northern part of Amphaxitis, as the Valandovo–Gevgelija valley was called in Hellenistic times, and is probably to be identified with the ancient polis of Doberos²⁷. Urban life continued during the Roman period, as is attested by various inscriptions²⁸ and a temple dedicated to Heracles²⁹. In Late Antiquity and after the Gothic invasions of the third century A.D. the town was converted into a castrum³⁰.

Thasian marble quarries provided the long-term, default white marble choice at Thessaloniki, where it was employed on structures such as a Late Archaic temple³¹ and the Arch of Galerius³². Two main types of Thasian marble were used extensively at Thessaloniki in the Roman period to meet the city's needs in figurative sculpture and architectural components³³. These were a coarse-grained white or greyish-white calcite used most commonly

19 Sokolovska 2011, 43 f. fig. 14.

20 Stefanidou–Tiveriou 2009, esp. 20.

21 Delaine 1997, 210 f., estimates the relative costs of sea, downriver, upriver and overland transport in the Roman period at 1 : 3,9 : 7,7 : 42.

22 Folk 1973, 37. 40. The same local pottery wares are also found along the Axios River, indicating the river's use in connecting settlements for trade: Blaževska – Pavlovski 2008, 7.

23 Anderson–Stojanović 1992, 193.

24 Myrina Kalaitzi pers. comm. For the output of the Beroian workshop see Kalaitzi 2007, 114–124.

25 Myrina Kalaitzi pers. comm.

26 This date is based on the personal style of the figures combined with the absence of drilled pupils.

27 A milestone with the distance from Idoumenai to Doberos and vice versa from the first century B.C. was found at Isar-Marvinci. On the identification of the city see Sokolovska 2011, 23–31.

28 E. g. *Συνπραγματευόμενοι Ρωμαῖοι* on the inscription honouring P. Memmius Regulus, *legatus Augusti pro praetore* in 41–44 A.D.: Babamova 2005, no. 27 pl. 9; a honorary inscription from the city to its benefactor M. Aurelius Democrates on his results in water supply, and a letter from the city to the Roman administration: Bofo – Krstevski 2006.

29 Built in 79/80 A.D. (unpublished inscription) and renovated in 181/182 A.D.: Babamova 2005, no. 29 pl. 9.

30 Sokolovska 2011, 18.

31 Despini – Stefanidou–Tiveriou 1997, no. 2; Herrmann Jr. – Newman 1999, esp. 301.

32 Barbin et al. 1999, esp. 82 n. 49.

33 Stefanidou–Tiveriou 2009.

for sarcophagi and architectural components from the quarry at Alikí³⁴, and a whiter medium-grained dolomite more suitable for figurative sculpture from the quarries at Cape Vathy³⁵ and Saliara³⁶.

It seems that south-eastern Macedonia to the south of the Demir Kapija Gorge made use of the Axios River to join the trade network of Thasian marble that was being imported to the coast³⁷. The Axios River provided an economic means of moving the stone inland and up-river from the coast. The Demir Kapija Gorge with its various rapids seems to have formed a significant barrier, though, deterring import further up-stream, because in the highlands to the north of it we have not encountered any dolomite from Thasos.

Stefanidou-Tiveriou's study of sarcophagi at Thessaloniki demonstrates that although the city was largely dependent upon various Thasian quarries for material, the sarcophagi met specific local requirements as to measurements and design. Thasian quarries produced roughly dressed pieces according to Thessaloniki's specifications, and these were then finished to meet distinctive local demands³⁸. The importance of local workshops in shaping products made from Thasian marble is also demonstrated by the Hadrianic grave medallion (cat. 4). The portraits show individual features which have been carved in direct response to the local clients' styling preferences. The wide range of hairstyles among the family members reflect their personal engagements with Empire-wide fashions: some wearing the short-cropped beard of Hadrian, others shown with stubble, or a clean shave and a 'bowl cut' like that of the Emperor Trajan³⁹.

Medallions, such as these, without inscription, alongside rectangular plaques with busts and an inscription set in an undefined lower field, are characteristic of the south-eastern region⁴⁰. Tombstones from further north are typically tall with a triangle fronton and relief field and inscription of almost the same size; grave medallions are unknown there and in the western regions of Lyncestis, Derriopos and Pelagonia. These regional differences and the carving of portraits to meet precise client specification indicate that although the Gevgelija/Dojran grave medallion was made of imported Thasian marble, it met specific local requirements and was finished locally⁴¹.

Sivec Dolomite

By far the most important marble in Roman and Late Antique Macedonia, both according to the number of artefacts and to the quality of workmanship, is a fine-grained white dolomite. It is different from Thasian material and can be traced to the Sivec quarry 10 km northeast of Prilep in central Macedonia (fig. 1)⁴²; it yielded the marble for twenty-five of the fifty-one pieces that we have sampled. The quarry is presently exploited by the Mermeren Kombinat AD, which is one of the world's biggest producers of dimension stones.

The quarry is located in the eastern part of the Zlatovrv mountain range, which is part of the Pelagonian Zone and forms the north-eastern border of the Pelagonian Plain⁴³. The rock series are distinguished by a relatively high-grade metamorphism that is, for example, reflected in the occurrence of pink corundum or ruby as trace mineral⁴⁴. The sequence is considered to be of Cambrian age and exhibits a total thickness of more than 1000 m, starting with fine-grained dolomite formations in the footwall series at Sivec followed by coarse-grained calcitic marble in the hanging wall at Pletvar (see below).

The main quarry pit at Sivec faces south, but the northern side of the watershed has also been exploited (fig. 12). The ridge that separates the two

34 Laskaridis – Perdikatsis 2009, 311.

35 Although this marble is more suitable for figurative details, Rockwell 1993, 27 observes that it is still difficult to carve and that workshops tend to avoid fine details when working this material.

36 Stefanidou-Tiveriou 2009, 19 f.; Laskaridis – Perdikatsis 2009, 310.

37 Marble analyses that were carried out on artefacts from the Louvre's ›Macedonia‹ exhibition also show this use of Thasian marble in Southern Macedonia, as Ludovic Laugier and Patrick Blanc reported at ASMOSIA 10, a conference that took place at Rome in 2012. They are preparing a report to be published in the proceedings of the conference.

Thasos marble was appealing because unlike Pentelic it was not prone to faults and could be cut into large blocks in quarries some of which were set at heights that permitted the blocks to be loaded directly onto ships: Rockwell 1993, 26 f.; Laskaridis – Perdikatsis 2009, 312; Russell 2009, 18 f.

38 Stefanidou-Tiveriou 2009, 20–26.

39 Zanker 1982 notes that the emperor's personal style was often emulated by his subjects, but this picture has been nuanced by Cain, Fittschen, and Smith who have shown that, as here, a range of personal styles existed contemporaneously: Fittschen 1992–1993; Cain 1993; Smith 1998.

40 Rüsç 1969, 104.

41 Little is known of contemporary workshops in this region, though a sculptor named Adymos, son of Euandros, signed a statuette from Marvinci (Idoumenai) that Josifovska 1958 dates to the first century A.D. The figure is believed to be related in some way to a Beroian sculptor named Euandros, son of Euandros, who worked for clients around Macedonia and neighbouring regions: Kalaitzi 2007, 114. 122–124.

42 Cf. Babić 1972, 24. 33. An alternative attribution to another quarry has become obsolete, since our archaeometrical analyses have confirmed the provenance from Sivec: Nikolajević 1981, 188.

43 Cf. Nance 1981; Mountrakis 1986.

44 Cf. Barić 1969; Jersek – Mirtić 1999.



12



13

Sivec

Fig. 12 Satellite view (M. 1 : 30 000)

Fig. 13 Pre-modern quarry

Fig. 14 Pre-modern quarry



14

45 Cf. Moens et al. 1988a, 93–109; Kozelj 1988, 7 pl. 27; Waelkens 1990, 57 fig. 4.

46 The data of the quarry samples and their petrographic characterization are presented in detail in Prochaska 2013. Cf. Barić 1969.

quarry areas at about 1000 m above sea level has not yet been touched by modern exploitation and preserves traces of pre-modern quarrying (figs. 13, 14). Figure 14 shows a rectangular void that is about 1 m wide and twice as long; the block obtained would have been smaller, because the marble was quarried with pickaxes and this required digging a furrow all around the block⁴⁵. The furrow would widen at the top, and this accounts for the slanting walls of the void, but all tool marks have eroded.

Sivec dolomite is of exceptional whiteness, with only minor visible impurities⁴⁶. Different qualities of the dolomitic marble can be distinguished depending on the occurrence of slightly greyish layers or spots on the freshly cut

surfaces, but the amount of insoluble residue of a homogenized bulk sample turned out to be less than 0,1 %. The microphotograph shows a distinct monomineralic, granoblastic, polygonal texture with a maximum grain-size (MGS) of ca. 1 mm (fig. 5). The pronounced polygonal fabric, the smooth grain boundaries, and the lack of embayed or sutured textures are possible reasons why the marble is inclined to sanding and to sugary corrosion when exposed to the weather. Therefore, Sivec dolomite is ideally employed for interior decoration⁴⁷.

The artefact samples indicate that the extraction of Sivec dolomite commenced in the Roman period, probably in response to the construction boom in cities like Stobi that consumed a huge amount of marble. The demand peaked with what Ward-Perkins termed the »marble style« of architecture in the second century A.D.⁴⁸, when consumption and production was at an all-time high⁴⁹. Even Greece, which had longstanding traditions in stone quarrying, had to upscale production, new resources such as coloured marbles started to be exploited in the region⁵⁰, and quarrying was also introduced to areas that previously had no such tradition⁵¹. Our samples indicate that the quarries at Sivec were used to meet increasing local demands from the mid-first century A.D.

Sivec Dolomite at Roman Styberra, Heraclea Lyncestis and Prilep (cat. 6–12)

Sivec dolomite was frequently used in the Pelagonian Plain immediately to the south of the quarry, where the short distance alone would have been a major incentive, as marble was difficult to transport⁵² and the cost of moving stone could far exceed the costs of extraction⁵³. It is, therefore, unsurprising that the nearby settlements of Heraclea Lyncestis and those of the Derriopos and Pelagonia regions should have exploited the local resource (fig. 1)⁵⁴, and we were able to show this for the following artefacts: Four marbles from Styberra belong to the first to second centuries A.D. and comprise two ephebic lists (cat. 6, 7), one pedestal for the bust of a man named Philoxenus (cat. 8) and a female statue of »Large Herculanum Woman« type from the second century A.D. (cat. 9). A cuirassed statue from Ceramiae/Varoš near Prilep has been dated by Stemmer to the Trajanic period on stylistic grounds (cat. 10)⁵⁵. A Corinthian capital from Bitola is similar to those of the second-century *scenae frons* of the theatre at nearby Heraclea Lyncestis (cat. 11)⁵⁶, and a statue of a man wearing himation from Heraclea Lyncestis has on stylistic grounds been attributed to the third century A.D. (cat. 12)⁵⁷.

The statuary is all of »standard« types that were produced in a range of marbles all around the Empire. However, there is clear evidence that these figures were sculpted in response to local choices and decisions. For example, in Stemmer's examination of the cuirassed statue he noted that the unusually sparse decoration of the figure's armour indicated a local workshop (cat. 10)⁵⁸. Although high-ranking officials wielding imperium were sometimes represented wearing military cuirass in the late first or early second century A.D.⁵⁹, it is more probable that this cuirassed statue type represented an imperial subject, because this costume progressively became the preserve of emperors and members of the imperial family during the Early Imperial period⁶⁰. The local workshop fulfilled its client's wishes to honour the emperor or other high-ranking Roman official by providing a pared down version of the military apparel seen as apt for these subjects both here and elsewhere.

The sculptors worked all the parts of the figure that were likely to be seen, but did not expend effort on less visible details such as the *pteryges* at the side

47 Cf. Babić 1972.

48 Ward-Perkins 1981, 300.

49 Although the chronology of demand and consequent exploitation varies depending on region and object type: Russell 2009, 74–80.

50 Lazzarini 2007.

51 E. g. Roman Britain: Pearson 2006.

52 Fant 1988, 147.

53 Pearson 2006, 71–74.

54 Long distance trade in stone did of course occur, but see Russell 2009 on the vital role played by local quarries in meeting the needs of local markets.

55 Stemmer 1978, 65 f. no. V18 pl. 41, 3.

56 Cf. also a similar capital from Dojran, that is today also kept at the Archaeological Museum in Skopje: Lilčić 2001–2002, 213 f. 283–285.

57 Sokolovska 1987, 153 no. 98.

58 Stemmer 1978, 65 f. no. V18.

59 Niemeyer 1968, 52 f.; Stemmer 1978, 148 n. 578. See also Knudsen et al. 2002, esp. 236 f.

60 Smith 2006, 117–121.

of the figure. When this sparsely adorned cuirass is compared with the more elaborate and highly finished examples of this typology produced elsewhere, the piece seems summary⁶¹, but in its original local context this large figure would not have been seen alongside these other models and would doubtless have appeared satisfactory and imposing. Paint may also have been used to pick out additional designs on the surface of the cuirass, making it appear more richly ornamented than it does now.

The Large Herculaneum Woman figure also belongs to a ›standard‹ statuary type that is well attested around the Roman World, and the example from Styberra contains the same essential canonical elements of drapery and stance seen elsewhere (cat. 9)⁶². However, it also includes an unusual raised neckband on the subject's tunic⁶³. The statue is of relatively high quality⁶⁴, with textural effects such as polished skin and contrasting finish to mantle and tunic that were time-consuming extras indicative of an accomplished workshop⁶⁵. This suggests that the neckband was not the result of an artistic ›misunderstanding‹ of the type, but more probably sculpted in this way in order to respond to a client's particular local dress preferences.

As Styberra is located only about 20 km from the Sivec quarry, statues like the Large Herculaneum Woman could have been carved at the quarry, in direct response to client demand⁶⁶. The figure may have been completely worked by a quarry-based workshop, but this would have left the fine sculptural effects of polish and drilling more vulnerable to damage when transported. It is, perhaps, more probable that it was roughly worked at the quarry⁶⁷ in order to reduce its weight for transport⁶⁸, and moved in an unfinished state to be finished off in the city, either by sculptors provided by the quarry or by a local workshop based in Styberra.

As we have seen, a range of settlements in the area made use of Sivec dolomite. How many workshops were involved in statuary production at these sites is impossible to ascertain. Rivers such as the Erigon/Crna pass through the region and this may have aided the transport of worked stone to areas without a local workshop, but larger settlements are likely to have required dedicated stone workers to respond to clients' demand for architectural monumentality, sculpture, and inscriptions.

Styberra is a plausible candidate for the location of such a local workshop and perhaps even contributed to the impetus that led to the exploitation of the Sivec quarries. It was an important polis in Derriopos during the Roman period with a high demand for inscribed and sculpted stone. The excavated areas of the polis, particularly the Gymnasium and the Temple of Tyche, yielded

61 Stemmer 1978, 65 f. no.V18.

62 Trimble 2011.

63 A second Large Herculaneum Woman that was found with cat. 9 also has a raised neck-band: Trimble 2011, 377.

64 Such judgements may seem subjective, but polish and drill work were time consuming optional extras that cost more. For the different hierarchies of time and skill in sculptural tasks see Boschung – Pfanner 1990; for the assessment of ›quality‹ see Smith 1994, 261.

65 On ascertaining quality in the Large Herculaneum Woman type, see Trimble 2011, 126–135. 137–142.

66 As the quarry was catering to a local market, there would be no advantage in restricting the appeal of the marble block by prefabrication, when it could easily respond to client demand. There are a number of Large Herculaneum Woman statues found more widely in Macedonia which are thought to be made of local stone: e. g. Sokolovska 1978, 85; see also Trimble 2011, 373–380. Trimble argues that amongst this figures there is evidence for the finishing of quarry prefabricated forms in different local workshops: e. g. Trimble 2011, 95 f. 379 f. Such pieces could have come from various local sources, but they may conceivably have

been roughed out at the Sivec quarry. If true, this would indicate a wider market for this quarry, but would not mean that the pieces were being prefabricated for stock rather than produced in direct response to client demand.

67 The remains of three statues in the small quarries near Xylophagou on Cyprus indicate that this method was adopted when catering to local markets: Karageorghis 1969, 494–497; Russell 2009, 129.

68 The weight of Large Herculaneum Woman figures has been estimated at a substantial 405–540 kilos approximately, even when in worked form: Trimble 2011, 108 f.

a rich array of marble sculpture and inscriptions⁶⁹. The Gymnasium included a range of honorific statuary, mostly of the Large Herculaneum Woman type, men shown in ›arm sling‹ himation, votive sculptures of Asclepius, Dionysus as a child, and Hermes, as well as twelve ephebic lists dating from A.D. 41–48 to 224/225⁷⁰. The portrait busts of T. Flavius Orestes and his son Philoxenus from around the mid-second century A.D. were found in the Temple of Tyche (cat. 8)⁷¹, and the testament of Anthestis Fusca from A.D. 126/127 lists a T. Flavius Philoxenus among her heirs⁷².

Sivec Dolomite at Roman Stobi (cat. 13–17)

At Roman Stobi⁷³ on the confluence of the Axios/Vardar and the Erigon/Crna River the choice for Sivec dolomite was less obvious than on the Pelagonian Plain (fig. 1). For one, the road from Sivec to Stobi leads across a pass at Pletvar and requires an ascent to 1000 m above sea level, and for another the two rivers and in particular the most important trade route of the region along the Axios/Vardar⁷⁴ provided an alternative that was not available on the Pelagonian Plain. Nevertheless, Sivec dolomite is again most prominently represented; it is the most common fine white marble at Stobi and served both for figural as well as for architectural sculpture: We sampled an Antonine portrait head from an arcaded building at the Forum (cat. 13), a frieze from the wall revetment of the same building⁷⁵ that has been attributed to the end of the first or the early second century A.D. (cat. 14), as well as a capital (cat. 15) and an architrave (cat. 16) from the theatre that was built in the mid second century A.D.⁷⁶.

The portrait head may have belonged to a kline lid, to a bust or to a statue (cat. 13). The face has been polished, and the eyes have the iris outlined and pupil drilled in typical Antonine style, while the back of the head is much more summarily worked. The portrait was probably produced in response to the client's demand by a local workshop with experienced workers. As there are many reliefs and statues preserved from the Roman period at Stobi, as well as over 130 inscriptions, the permanent presence of one or even several workshops seems likely (cf. below).

Various Imported Calcites at Roman Stobi (cat. 18–23)

In addition to Sivec dolomite, Stobi has also yielded a greater variety of calcites than any other excavation in Macedonia, and this is probably due to the size of the city as well as its location on the Axios/Vardar and Erigon/Crna Rivers that provided for relatively easy transportation within the highlands. The decision to import marble from further afield was probably due to a range of ›pull‹ factors: polychrome marble was highly desirable, because it looked ›foreign‹ and ›exotic‹, immediately conveying the difficulty of obtaining such material. For this reason large quantities of coloured marble revetment were imported to adorn the city's public buildings⁷⁷. Alternatively, the decision to import finished pieces in foreign marble may have been made for the sake of superior workmanship that carried a heightened prestige value.

Some imported pieces combine exotic material with exceptional carving, and the most remarkable example is a worked obsidian object (cat. 18). Although this volcanic glass is difficult to carve to produce figures in the round, it has been carefully sculpted to a high technical standard, with the surface of the

69 Papazoglou 1988 gives the total number of 275 epheboi and ephebarcheis, with a total number of 284 people, and according to the number of epheboi estimates a free population in the city of approximately 12 000 in the first century A.D.

70 Vulić 1931, passim; Vulić 1941–1948, passim; Vučković-Todorović 1963.

71 On second-century portrait style see Claridge 1988; Pfanner 1989, esp. 195.

226–228; Fittschen 1992–1993, 445–487; Smith 1998, 61–63.

72 IG X 2, 2 no. 336 pl. 49.

73 The city is documented as municipium on coins minted since A.D. 73 and in three inscriptions. For this and an analysis of the changes in the status of the city see Papazoglou 1986.

74 See above n. 22.

75 Jakimovski – Shurbanoska 2010, 52–54: ›Marble revetment from the niches and the pilasters, the panels were made of several types of marble: breccchia limestone from the vicinity of Stobi, white fine-grained marble from Sivec, serentinit from the vicinity of Stobi (Vodovrati to the west and Sirkovo to the south)‹.

76 Gephard 1981.

77 Such veneer is used around the Roman world to give the desired full polychrome marble effect, and was particularly useful at inland sites where transport of more bulky blocks of such stone uphill or over long distance was difficult: e. g. Dodge 1988; Waelkens et al. 2002a, 374–379.



Fig. 15 Stara Zagora, Museum. Yellow Pan with a Dionysiac corymb and ivy wreath

figure polished and the hair carefully incised. Pliny refers to various statues in natural obsidian (HN 36, 196 f.), but original pieces are rare⁷⁸ and were frequently imitated in glass⁷⁹. It seems likely that this ostentatiously high quality workmanship would have required specialist training. It is therefore probable that the piece was imported in worked condition from elsewhere. Feasible potential sources for the obsidian might be Anatolia or the Near East⁸⁰, but the origins of this piece and its workshop remain uncertain. What is clear is that there was an appetite for high-quality assertively ›exotic‹ sculpture at Stobi.

A yellow head of an infant with Dionysiac attributes appears to be another conspicuous example of imported coloured stone (cat. 19). It resembles small-scale *giallo antico* products, which by the second century A.D. were found widely distributed in Rome and the provinces⁸¹. This *giallo antico* was often used to represent barbarians, animals, or subjects of a similarly Dionysiac theme to the yellow head on an equally miniature scale. Such pieces were sometimes worked in the round, but often consisted of small herms, or pieces applied as decoration to other surfaces, as seems to have been the case with the yellow Stobi head⁸².

However, *giallo antico* marble was extracted from quarries in the hills around Chemtou, Tunisia, ancient Simitthus⁸³, and despite the strong resemblance in colour and iconographic theme, the marble analysis of the yellow head does not suggest this origin for the stone. This may indicate either that our knowledge of Chemtou marble is incomplete or that another workshop was exploiting similar yellow stone to copy the production of Chemtou. It is unlikely that the yellow material was a resource local to Stobi, because such polychrome stone was extremely prized in the Roman period and if there were a local supply one would expect to see it in relative abundance, but Stobi's experienced excavators are unfamiliar with this material.

Another miniature head of the same yellow alabaster-like material has been found at Stara Zagora (fig. 15). This example depicts a horned and bearded Pan⁸⁴ with a Dionysiac corymb and ivy wreath similar to the Stobi head. This piece is extremely skilfully worked with the drill used to define hair, beard, nostrils and mouth. The back of the piece is flat for application to another surface, as with the Stobi head. These parallels may suggest that somewhere in this wider region there was an alternative source to *giallo antico* with workshops that specialized in similar products.

The availability of fine white dolomite from Sivec might be expected to keep the import of other white marble from further afield to a minimum. However, a Roman crater that has been re-used in the baptistery of the Episcopal Basilica at Stobi apparently consists of Pentelic marble (cat. 20). It is of enormous size, but was undoubtedly imported from the Mediterranean basin, where many similar craters are known⁸⁵. The import was surely motivated by the outstanding form and finish that makes for a spectacular showpiece, although the marble itself looks commonplace and unremarkable.

An Aphrodite figure with an inscribed base also consists of plain white marble and may have been imported (cat. 21). The calcite does not match any marble that we have come across in the region, but is similar to calcite provided by the quarries of Aphrodisias in Caria. Aphrodisian workshops did produce finished Aphrodite statuettes that were exported⁸⁶, but these are generally smaller, and of higher workmanship, which makes the sculpture at Stobi an unlikely candidate for Aphrodisias' output⁸⁷.

Two Roman capitals from elsewhere in Macedonia also consist of white calcites, for which no regional matches are known but that compare to Anatolian marbles from Aphrodisias and Ephesus (cat. 22, 23). In both cases the

78 One piece thought to be from the Roman era is a miniature portrait in Cologne, though the quality of this appears much lower: Thomas 2007, 288.

79 E. g. Harden 1987, 28 no. 6; for another example of ›artificial obsidian‹, see also Whitehouse 1997, 199 no. 348.

80 E. g. Cherry et al. 2008; Ghorabi et al. 2008.

81 Röder 1988, 91–94; Cioffarelli 1989, 74; Röder 1993, 17–42.

82 E. g. Cioffarelli 1989; Pensabene et al. 2002, 378 nos. 77–79.

83 On this site see the collected works in Rakob 1993.

84 Cf. LIMC VIII 1, 2 (1997) no. 81 s. v. Pan (J. Boardman).

85 Herrmann 2001; Herrmann Jr. – Tykot 2009, 60–62.

86 For instance, on the export of the ›Aphrodite of Aphrodisias type‹ see Brody 2007, esp. 2–4, 82 f. Brody notes that this type was also produced in different centres in a range of media.

87 R. R. R. Smith pers. comm.

workmanship is of high quality but inconclusive as to origin, because similar capitals were produced by a great number of workshops throughout the Roman Empire. Our database of quarries and artefacts from Macedonia is as yet too limited to exclude the possibility that the Aphrodite and/or the capitals originate from some hitherto unknown regional sources.

Local Calcite at Roman Stobi (cat. 24–27)

The seats of the theatre and other Roman carvings at Stobi seem to consist of the same coarse-grained calcite, which points to some local source, because otherwise the superior dolomite from Sivec should have been used (cat. 24. 25). Such a local source will have enabled Stobi's sculptors and their clients to purchase marble without outlaying prohibitive sums in transportation and constituted a precondition for the monumental marble architecture that was so important as a status symbol of Roman urbanism.

The theatre was built in the middle of the second century A.D.⁸⁸, and the same marble seems also to have been used for a second-century *heroon* in the necropolis at Palikura, about 2 km south-west of Stobi (cat. 26). The sample has been taken from an inscription that was found in situ, when the *heroon* was excavated. The tomb is outstanding both for its size⁸⁹ as well as for the formula used in the long and carefully cut inscription: Lycius, the owner of the *heroon*, decreed that his tomb was not to be inherited by his children and that its violation should be punished. This is not otherwise attested at Stobi⁹⁰ and indicates an engagement with the wider Greek speaking world, where such formulae were in common usage.

A statuette of Hygeia consists of similar coarse-grained white calcite, and its middle-level quality seems compatible with local workmanship: it is rendered in shallow relief and designed to give maximum impact from the front, but only summarily worked at the back (cat. 27).

Dark Veined Calcite from Pletvar. Roman Carvings Re-used in Late Antique Stobi (cat. 28–32)

After major destructions in the second half of the third century A.D. that may be attributable to invasions by Goths and Heruli in 267/269 Stobi saw considerable prosperity and building activity again during the Late Antique period starting from the fourth century onwards. This was in turn followed by destruction in A.D. 447 and again in 479, when first the Huns and then Theodoric and the Ostrogoth invaded the Balkans⁹¹ and ransacked Stobi. Afterwards, the Byzantine re-conquest led to renewed building activity⁹²: The Episcopal Basilica was rebuilt, a Basilica Extra Muros was constructed, and most of the Late Antique marbles in this study were re-used, but little new quarrying and carving seems to have taken place.

The re-use of building material from the Roman period was common throughout Late Antiquity, for example a spiral column shaft at a so-called

⁸⁸ See above n. 76.

⁸⁹ Other *heroa* are documented by two inscriptions from Dolni Disan in Tikveš region, approximately 20 km from Stobi; one inscription is as yet unpublished, for the other see Josifovska 1953, 239–241 fig. 8.

⁹⁰ For the epigraphy of Stobi see Demitsas 1896; Saria 1930; Saria 1933b; Düll 1977; Papazoglou 1990a; Papazoglou 1990b; Wiseman 1981; Wiseman 1984b; Wiseman 1986; Wiseman 1999; Babamova 2012.

⁹¹ Heather 2007.

⁹² Aleksova 1986; Ivanovski 1993 (additional Late Antique living quarters extra muros); Wiseman 2006. Cf. Sodini 2007.



Fig. 16 Pletvar, quarry (foreground) and pass (middleground), looking southeast

Theodosian Palace (cat. 28)⁹³, Corinthian capitals in a sixth-century house east of the semi-circular court (cat. 29) and at the Basilica Extra Muros (cat. 30. 31). The spiral shaft and the capitals consist of dark veined calcite, and the only other sample of this material, a column shaft at the Basilica Extra Muros, was probably also re-used and dates from the Roman period, because the basilica was mainly built with re-used marble (see below), and the dark veined calcite does not seem to have been newly carved during Late Antiquity (cat. 32).

The dark veined material was apparently quarried at Pletvar, a hamlet 10 km east of Prilep and on the eastern border of the Pelagonian Plain (fig. 1)⁹⁴. At 1000 m above sea level Pletvar marks the pass through which the road to Stobi crosses eastwards from the Pelagonian Plain towards the Crna River valley. As the crow flies, Pletvar is only about 8 km away from Sivec and part of the same geological sequence, wherein Sivec dolomite forms the footwall series and Pletvar calcite the hanging wall⁹⁵.

The quarry area at Pletvar lies 100 m to the north and above the hamlet (fig. 16). First, the elevation is moderate and several crater-shaped pits, some of which are filled with water, give evidence of pre-modern quarrying. Then follows a steep slope, all of which seems to have also been quarried at some point, because fist sized debris extends along the whole length of it, over several hundred meters, and iron chisels as well as unfinished artefacts have been found⁹⁶.

Two deep pits stand out, the eastern one being smaller and older (fig. 16), whilst the western pit was recently enlarged with a band saw that revealed the

93 Kitzinger 1946b, 118–129.

94 Cf. Babić 1972, 24. 33.

95 The data of the quarry samples and their petrographic characterization are presented in detail in Prochaska 2013. Cf. Barić 1969.

96 Babić 1972.

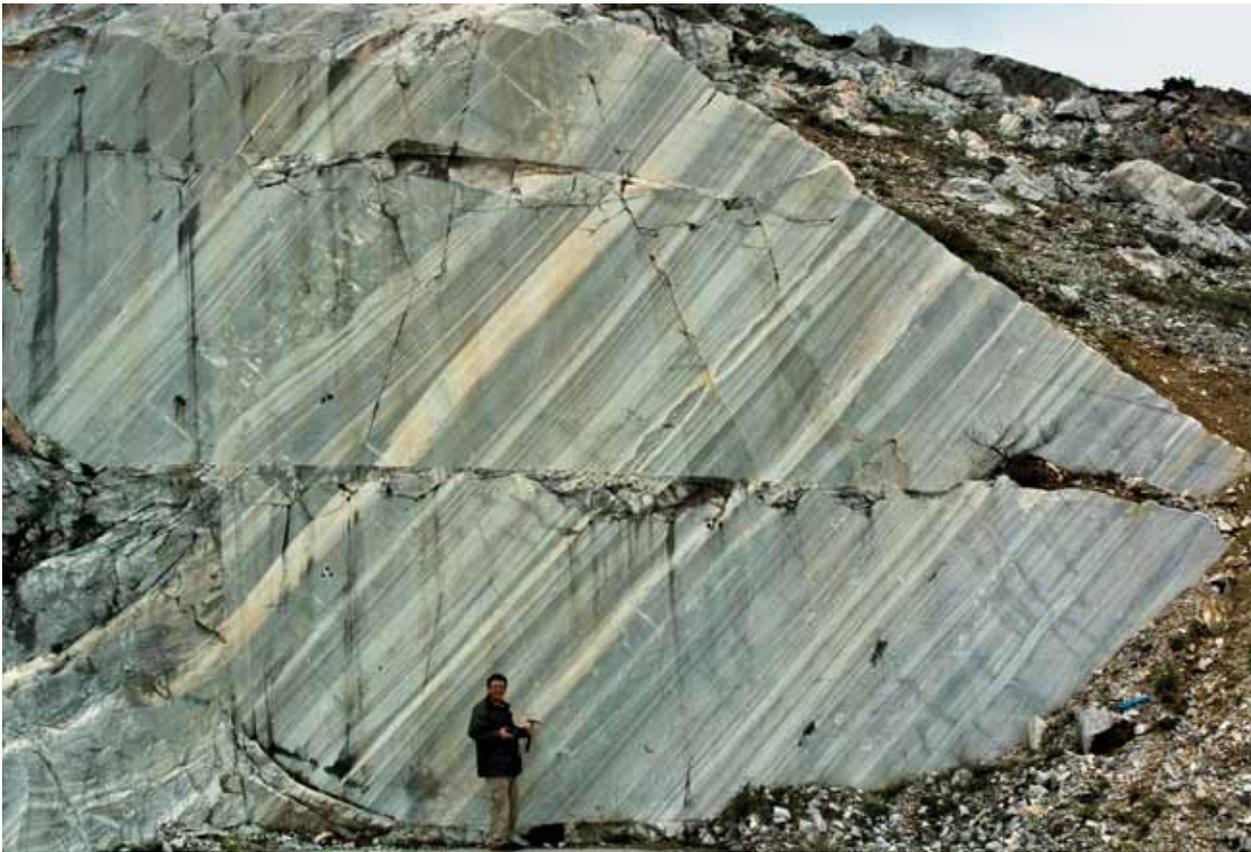


Fig. 17 Pletvar, modern quarry



18



19

Fig. 18 Pletvar, pre-modern block a

Fig. 19 Pletvar, pre-modern block b

black veins (fig. 17). Scattered below the western pit lie five square blocks that are all about 80 cm long and 40–60 cm wide, which were quarried with pick-axes and preserve tool marks (figs. 18, 19). The old blocks had probably lain buried under debris, until they were uncovered in the course of the recent exploitation of the western pit.

The marble is coarse-grained (MGS ~ 4 mm) and usually massive, with only minor schistosity. The colour is variable, from pure white to all shades of grey. Sometimes a distinct banding on the centimetre scale can occur. In the

more greyish, impure varieties, mica is visible with the naked eye. The microscopic texture is dominated by a coarse-grained fabric of twinned crystals with sutured and embayed grain boundaries (fig. 9).

Newly Carved Calcite from Late Antique Stobi (cat. 33–35)

The quarrying and carving of new stonemasonry was exceptional during Late Antiquity and limited to one kind of calcite as well as Sivec dolomite. The calcite was employed for unusually large items for which no older spolia would have been available for re-use or re-carving: an Ionic impost capital at the Central Peristyle or House of Polyharmus (cat. 35)⁹⁷, and a pedestal in the narthex of the Episcopal Basilica (cat. 34). The latter is one of a group of four pedestals, all of which are decorated with Christograms in high relief and probably consist of the same marble. The Christograms have the form of a cross with the upper arm doubling as the rho, which was common in the southern Balkans⁹⁸.

These large artefacts were difficult to transport and make it likely that the calcite was quarried in close proximity to Stobi. The material is different from the calcite of the theatre seats that appears also to have been quarried close to Stobi, but apparently only during the Roman period (cat. 24. 25).

A Roman acanthus leaf that was found at Scupi, the ancient predecessor of Skopje (cat. 33)⁹⁹, seems to have been carved from the same calcite as the Late Antique capital (cat. 35) and the pedestal (cat. 34) at Stobi, in which case this quarry would have been exploited over a longer period of time. Alternatively, the Roman acanthus leaf could have been imported from Thasos, where a similar calcite was quarried and exported throughout antiquity. Whilst the latter scenario is feasible for the Roman period, during which a lot of foreign marbles were imported to the Macedonian highlands, it is out of keeping with the enormous size and weight as well as the rough and simple workmanship of the Late Antique capital and pedestal from Stobi. These are unlikely to have been imported across the rapids of the Demir Kapija Gorge from Thasos, when similarly large items of superior workmanship were more easily available from Sivec (see below).

Newly Carved Sivec Dolomite at the Episcopal Basilica of Stobi (cat. 36–51)

Late Antique carvings from Sivec dolomite were mostly found in the Episcopal Basilica (cat. 36–47. 49. 50). Some of the capitals are fairly large (cat. 40–44), and the ambo platform (cat. 45) as well as the *transennae* (cat. 46. 47) also required large blocks of marble and will not have been re-carved from Roman spolia, but indicate a continuous exploitation of the Sivec quarry. This is confirmed by the *templon* from Suvodol 40 km southwest of Prilep (fig. 1) that is also made of Sivec dolomite and would not have been re-carved either, because of the large sizes of the posts and slabs and also because there were few spolia available at Suvodol (cat. 51).

The posts and slabs from Suvodol are similar to some found in the Episcopal Basilica at Stobi¹⁰⁰, all posts being decorated with soffits and the slabs with either lozenges or medallions and crosses. It is economic to assume that they were made by the same workshop either at the quarry or on the respective building sites, because the quarry lies half way between Stobi and Suvodol. In

97 Kitzinger 1946b, 134–140.

98 Sodini 1977, 440.

99 Jovanova 2006.

100 Saria 1933a, 120–123 figs. 50–53.

addition to the slabs the Episcopal Basilica at Stobi also contained *transennae* of Sivec dolomite (cat. 46. 47), but one *transenna* is made of calcite (cat. 48). The workmanship is the same, of the highest order and not otherwise attested in Late Antique Macedonia, and there is hardly any doubt that the calcite *transenna* was made by the same workshop that also carved the Sivec dolomite. The workshop apparently had access to other marble too, probably in the form of *spolia* from Roman Stobi, in which case the stonemasons must have come and worked there and at least some of the carving taken place on site.

This expert carving will have happened before the second rebuilding of the Episcopal Basilica around A.D. 500¹⁰¹, because the latter apparently did not involve any highly skilled stonemasons, but relied on the use of *spolia* instead: For example, most of the volutes were roughly chiselled off an Ionic impost capital in order to re-use it as an impost (cat. 37). Other capitals are unfinished (cat. 40)¹⁰², yet other date from the Roman period¹⁰³. Next to Sivec dolomite different marbles as well as limestone were also employed¹⁰⁴. The quality and style of the workmanship varies, for example among the Ionic impost capitals that were probably used on the galleries: first class specimens with large volutes and undercut relief contrast with simplified bulky forms and doughy carving¹⁰⁵.

The re-use of various older carvings also explains why the Sivec dolomites do not form a homogenous group either, but differ in form and workmanship: The egg and dart frieze of a Theodosian capital is apparently not finished; the fine-toothed acanthus encloses eyes, and neighbouring leaves meet at the tips (cat. 40). In contrast, peacock capitals are highly finished, the fine-toothed acanthus does not enclose eyes, and neighbouring leaves are separated by reeds (cat. 43. 44). The quality of a composite capital with broad-pointed acanthus is middling, the leaves sluggish, the volutes doughy, nothing has been undercut and a row of simple lotus leaves replaced the traditional egg and dart frieze (cat. 41); in contrast, an eagle capital with broad-pointed acanthus has spritely leaves and is deeply undercut (cat. 42).

These and yet other capitals with fern-like fine-toothed acanthus leaves¹⁰⁶ are of the same large size and were apparently all part of the same main arcades on either side of the nave. The arcades must have looked similarly varied as in other sixth-century basilicas in the wider region, the one of bishop Euphrasius at Parenzo/Poreč¹⁰⁷, St. Euphemia at Grado¹⁰⁸, and St. Demetrius at Thessaloniki¹⁰⁹. The latter three churches are located on the Mediterranean shore and were built with Proconnesian marble that could conveniently be brought by ship, but the quarry and workshop at Proconnesus/Constantinople seems to have ceased production by the time the churches were built, and the variety of the capitals is taken to indicate re-use and/or assemblage from stock.

The same was apparently the case at Stobi, when the Episcopal Basilica was rebuilt after the Hunnic and Ostrogothic invasions. Sivec dolomite does not seem to have been quarried and worked any more, and the various capitals appear to have been assembled from stock and/or from earlier buildings that were probably destroyed during the invasions. One such building may have been the Episcopal Basilica itself. Originally from the fourth century, it had been rebuilt once before during the first half of the fifth century, and the date of this second phase agrees well with the formal repertoire of the carvings¹¹⁰.

The broad-pointed acanthus (cat. 37–39. 41. 42) was established at Proconnesus/Constantinople by the late fourth century, when it was applied to the *propylon* of the second church of St. Sophia¹¹¹ and to the Golden Gate¹¹². So-called Theodosian capitals (cat. 40) with fine-toothed double leaves (cf. cat. 43. 44) were used for the narthex of the basilica of St. John at Constan-

101 Aleksova 1986, 14–38; Wiseman 2006, 796–801.

102 Egger 1929, 53–55 figs. 40. 41.

103 Egger 1929, 63–66 figs. 61–64; Saria 1933a, 118 f. fig. 48; Kitzinger 1946b, 152 f. figs. 211–215; Nikolajević-Stojković 1957, figs. 47–55; Hoddinott 1963, 164 fig. 75.

104 Egger 1929, *passim*.

105 Egger 1929, 52–58 figs. 39–49; Kitzinger 1946b, figs. 131. 132. 135. 137; Nikolajević-Stojković 1957, figs. 64–76; Hoddinott 1963, pl. 39 a–i; Zollt 1994, 350 n. 371.

106 Egger 1929, 47–76 figs. 29. 31. 33. 41. 45–48. 67–76. 86. 87; Saria 1933a, 124 f. figs. 55. 57; Kitzinger 1946a, 68 f. cat. 75 f. figs. 105. 106; Kitzinger 1946b, 102–106 figs. 129–132. 135. 137. 138. 140; Nikolajević-Stojković 1957, figs. 31. 33–38. 40. 64. 67. 69–72. 172–174; Hoddinott 1963, pls. 38. 39 b. d–h; 40 a; Daim et al. 2010, 247 cat. 236.

107 Terry 1988; Pilutti Namer 2004.

108 Scamacca 1965; Deichmann 1975, 31; Bovini 1973, 155; Pilutti Namer 2004.

109 Spieser 1991–1992; Niewöhner 2010, 434.

110 With the possible exception of Ionic impost capitals, for which a sixth-century date has been proposed: Vemi 1989, 28 n. 56; Zollt 1994, 348–350.

111 Schneider 1941; Deichmann 1956, 63–69.

112 Bardill 1999; Asutay-Effenberger 2007, 54–61 fig. 203; Russo 2009.

tinople around the middle of the fifth century¹¹³. Both types of acanthus are already attested on pilaster capitals from Docimium in Phrygia that were found at the Myrelaion in Istanbul and seem to have decorated the interior of that late fourth century (?) palace¹¹⁴.

The Adaptation of Anatolian Repertoire for Late Antique Sivec Dolomite

The central Anatolian quarry at Docimium was famous for sarcophagi, sculpture, craters and wall revetments that were exported throughout the Mediterranean¹¹⁵, and in the fourth century developed the formal repertoire that was later taken up at Constantinople during the Theodosian building boom¹¹⁶. In the fifth and sixth centuries Docimium remained the leading quarry and workshop of central Anatolia and supplied the High Plateau with the same quality and repertoire that was elsewhere imported from Proconnesus/Constantinople, wherever the Mediterranean Sea allowed for convenient transportation by ship.

Sivec seems to have played the same part for the central Balkans. The workmanship is indistinguishable from Proconnesus and Docimium¹¹⁷, and this may indicate a direct connection, because no other Late Antique workshop is known to have produced the same repertoire and quality. As the Imperial estate was apparently involved in the administration both of Proconnesus and of Docimium¹¹⁸, it seems conceivable that the same organization may have run Sivec as a Balkan branch. This could have been a Late Antique initiative, as there is no indication for Imperial involvement at Sivec during the Roman period. In fact, exploitation at Sivec may have been discontinued during the ›crisis of the third century‹, and this could explain why foreign stonemasons from Anatolia seem to have been called in, when production was resumed during the building boom of the later fourth century¹¹⁹. The same clearly happened at Proconnesus/Constantinople, where the grandiose Theodosian enlargement of the new capital relied on formal repertoire and workmanship and therefore probably also on stonemasons from fourth century Docimium¹²⁰. Docimium, Proconnesus and Sivec seem to have formed a Late Antique marble network that is reminiscent of and was possibly in part continued from the Roman quarry system¹²¹.

Furthermore, a direct connection between Sivec and Docimium rather than Proconnesus is indicated by posts with paired colonnettes: Such posts are rare and not known from Proconnesus/Constantinople, but among the most sophisticated carvings from Late Antique Docimium¹²² and Sivec: one was found in the Episcopal Basilica at Stobi and is now kept at Belgrade¹²³; we were able to inspect it and confirm that the marble looks identical to that of the ambo platform, which proved to be Sivec dolomite (cat. 45).

Another, similar post with paired colonnettes had been reused at Drenovo 25 km up the Crna River from Stobi¹²⁴, but has since come into the possession of the National Museum at Sofia¹²⁵. Originally, the second post has apparently come from a Late Antique basilica at Mutičanski Dol about 4 km west of Drenovo¹²⁶. Mutičanski Dol has also yielded a fine Theodosian capital, that is similar, but not identical to those from the Episcopal Basilica at Stobi (cat. 40)¹²⁷, and this makes it most likely that both the post and the capital from Mutičanski Dol are also made of Sivec dolomite. Furthermore, an Ionic impost capital, an impost, an eagle capital, and a peacock capital at Drenovo all are similar, but not identical to those from the Episcopal Basilica at Stobi

113 Kramer 1994, 36 f. pl. 12, 3, 4.

114 Niewöhner 2010.

115 Waelkens 1982; Waelkens 1985; Kramer 1994; Herrmann 2001; Waelkens et al. 2002a; Waelkens et al. 2002b; Waelkens 2009, 356, 357; Herrmann Jr. – Tykot 2009.

116 Niewöhner 2007, 119–134; Niewöhner 2010, 420 f.; Niewöhner forthcoming.

117 Which has led previous scholars to assume a Proconnesian origin: RBK V (1995) 1210 s. v. Makedonien (B. Schellewald – L. Theis).

118 Ward-Perkins 1951; Fant 1989; Fant 1993, 157–160 (Docimium); 164 f. (Proconnesus); Drew-Bear 1994; Hirt 2010, 291–307, 318–323 (Docimium).

119 For the historical development and the corresponding archaeological record see above n. 92.

120 Niewöhner 2010.

121 For the latter see above n. 118.

122 Niewöhner 2006, 459 f. cat. 91 fig. 55 (Kızılcaören); Niewöhner 2007, 293 cat. 469bis pl. 64 (Cukurhisar). Some local Anatolian workshops produced simpler versions of the same kind of post with paired colonnettes: Barsanti 2003, 286, 292 figs. 76, 77; Niewöhner 2013, at Eskişehir.

123 Egger 1929, 74, 76 fig. 86; Nikolajević-Stojković 1957, fig. 172.

124 Filow 1927, 35 pl. 4, 1 (upside down); Egger 1929, 74, 76 fig. 87.

125 Inv. 1760: Ovcharov – Vaklinova 1978, cat. 60 (upside down).

126 Nikolajević 1981, 186 f.

127 Nikolajević 1981, 186 f. fig. 1.

(cat. 37. 39. 42–44)¹²⁸; they may also have come from Mutičanski Dol¹²⁹ and surely consist of Sivec dolomite, too.

This, the *templon* from Suvodol (cat. 51), other Late Antique carvings with similar repertoire and workmanship elsewhere in the region¹³⁰, where such is not otherwise attested and surely linked to Sivec, as well as the various *spolia* that were found in the Episcopal Basilica at Stobi, but were probably re-used from several earlier buildings, indicate that Sivec dolomite was quarried and carved for various Late Antique building projects. Rather than migrant workmen this implies a permanently installed workshop that was active during the Theodosian period.

This is confirmed by some peculiarities that distinguish Sivec from Proconnesus and Docimium, indicate the establishment of a separate workshop tradition, and may be compared to similar differences between the Proconnesian and the Docimian production¹³¹. For example, peacock capitals (cat. 43. 44), ›fern-like‹ leaves¹³² and the impost capital with a circular egg and dart frieze (cat. 39) are unique to Sivec. Another peculiarity seems to reflect a regional trend that can be observed throughout the southern Balkans: pointed acanthus is often more complex and swaying than on Proconnesian/Constantinopolitan or Docimian carvings, with more and longer points that if upturned describe full circles rather than just touch the one above (cat. 37–39)¹³³.

Various Roman Spolia and Newly Carved Sivec Dolomite at the Basilica Extra Muros of Stobi (cat. 52)

The Basilica Extra Muros was apparently built at about the same time, when the Episcopal Basilica was rebuilt after the Hunnic and Ostrogothic invasions of 447 and 479, and just as in the latter case most building materials of the Basilica Extra Muros were also re-used. They include a wide variety of Roman *spolia*, light and dark column shafts of different marbles and *verde antico* as well as various re-used capitals. Next to the darkly veined Corinthian capitals from Pletvar with one row of soft-pointed¹³⁴ acanthus leaves (cat. 30. 31) is found a larger white Corinthian marble capital with two rows of stiff-pointed¹³⁵ leaves (fig. 20), a greyish-white Ionic capital (fig. 21) and a boss capital that was carved reusing an older entablature block (fig. 22).

On the other hand, a small basket capital of Sivec dolomite dates from the early Byzantine period and may have been newly carved for the Basilica Extra Muros (cat. 52). The capital is unlikely to date from before the Hunnic and Ostrogothic invasions of 447 and 479, though, because all datable comparanda are later¹³⁶. It was probably carved after the Byzantine re-conquest, when the Basilica Extra Muros was built. It may have been part of the liturgical furniture that was often the only newly carved element of a church¹³⁷, for example the *templon* at Suvodol (cat. 51). On the one hand, liturgical furniture required specific parts that had not been common during antiquity and could not easily



20



21



22

Stobi, Basilica Extra Muros

Fig. 20 Corinthian capital

Fig. 21 Ionic capital

Fig. 22 Moulding recarved as capital

128 Filow 1927, pl. 4, 2 (Ionic impost capital); Saria 1933b, 22 figs. 21. 22 (peacock capital and eagle capital); Nikolajević 1981, 186 f. fig. 3 (impost).

129 Nikolajević 1981, 187.

130 Filipova 2006, passim.

131 Niewöhner 2007, 127–131; Niewöhner 2013.

132 Kautzsch 1936, 84 (fern-like leaves); 159 (peacocks); Strube 1984, 48.

133 Cf. Sodini 1977, 431–434.

134 Translation of the German technical term *weichgezackt*: RAC 20 (2004) 92 f. s. v. Kapitell 4. Der weichgezackte Akanthus (U. Peschlow).

135 Translation of the German technical term *starrzackig*: RAC 20 (2004) 91 f.

s. v. Kapitell 3. Der starrzackige Akanthus (U. Peschlow).

136 Dennert 1997, 65 f. Cf. RAC XX (2004) 106–111 s. v. Kapitell e. Neubildungen des 6. Jh. (U. Peschlow).

137 E. g. Niewöhner 2007, 143–147 (›Thermenkirche‹ and ›Kirche im Rundbau‹).

be acquired through re-use; on the other hand, it needed relatively little marble, was affordable to many otherwise unprepossessing churches¹³⁸ and – probably due to its prominent position in front of the apse – seems to have been a favourite object of donors¹³⁹.

The late date of the basket capital from the Basilica Extra Muros after the Hunnic and Ostrogothic invasions of 447 and 479 is confirmed by the different workmanship in comparison to the earlier Sivec dolomites from the Episcopal Basilica. The basket capital has an irregular, oblong shape, and neither the basket, nor the leaves and fruits that hang down from the corners of the abacus are undercut. The capital would have been carved locally, possibly from an older marble. It does not compare to any other Sivec dolomites, and the quarrying seems to have stopped earlier, possibly due to the invasions of 447 and/or 479.

Summary

In our survey of the landlocked highlands of northern Macedonia we have come across a great variety of local and imported marbles. This was to be expected in a region that is rich in marbles and participated in Roman urbanism in the ›marble style‹. A special feature that sets the highlands apart from the lowlands further to the south was the use of a certain fine-grained white dolomite. The material can be traced back to an ancient quarry at Sivec near Prilep and was used for Roman sculptures as well as the best carvings from Late Antiquity.

During the Roman period this regional source seems to have enabled even a relatively small polis like Styberra to afford a rich array of fine white marble monuments. Local quarries, like Sivec, appear adept at producing stone in response to a range of specific local demands, both in architecture and statuary. Future research may indicate more precisely the relationships between client, workshop and quarry, allowing us to see how much of the work required for different pieces took place at the quarry and/or at workshops in the poleis. While local white marble like Sivec was heavily exploited in the north, in the southern lowlands, up to the Demir Kapija Gorge, Thasian marble appears the default white marble preference, transported with relative ease via the sea and river, with much of this imported stone then finished locally to meet specific client demand. The difficulties presented by the natural terrain made the import of marble to sites like Stobi desirable primarily if it offered a quality which could not be met more locally, such as coloured or unusual stone, or workmanship of exceptional quality.

At the eve of Late Antiquity, exploitation at Sivec may have been discontinued during the ›crisis of the third century‹. When production was resumed during the later fourth century A.D., as Stobi and other Macedonian poleis recovered from preceding invasions and initiated the last large building program of antiquity, foreign stonemasons from Anatolia seem to have been called in. Sivec marble started to be carved in a style and quality that is without precedent in the region, but often indistinguishable from the production of the quarries and workshops at Proconnesus/Constantinople and Docimium in Anatolia. Sivec may conceivably have been run as a Balkan branch of the same organization. As a result, what emerges is a Late Antique marble network reminiscent of and possibly in part based on the Roman quarry system. At Sivec the Late Antique exploitation does not seem to have outlasted the Theodosian dynasty and may have been discontinued before the middle of the fifth century, when the Huns and Ostrogoth invaded Macedonia.

138 E. g. Niewöhner 2007, 119.

139 Cf. donor inscriptions on liturgical furniture: e. g. Niewöhner 2007, cat. 261. 359. 387. 388. 409. 416. 474. 475.

Catalogue

1 Grave Stele

Sample SK14: Pentelic(?) calcite. H 75,8; W 38; Th 16¹⁴⁰.

Condition: Only the lower right portion of the relief is preserved. The rest of the piece is broken off and missing. The line of the break runs from the base, across the second leg of the chair and the seated woman's thighs, it then follows the line of the woman's raised right arm to sever the heads of both figures. The surface of the sculpture has patches of white concretion on it and is chipped in places.

Description: The relief shows two female figures: one seated on a stool, while the other female is stood behind her. Both subjects wear *himation* and *chiton*. This similarity in dress indicates that the standing figure represented a family member, rather than a servant. The seated subject is shown with the legs in profile and the upper portion of the body turned slightly towards the viewer. Its left arm is drawn across the body, while the right arm is raised to the face, adjusting the *himation*. The figure is represented wearing an elbow-length, gap-sleeved *chiton*, which falls forwards to form a v-shaped neckline. This garment is depicted in a ›transparent‹ style, which emphasises the breasts. The *himation* is draped across the lower half of the body, over the right elbow, and then adjusted with the right hand, and pulled behind the figure's head. It then falls to cover the woman's left shoulder, arm and hand, with a portion of cloth hanging over the edge of the stool. The standing woman has the right foot forwards and wears a *chiton* with v-shaped neckline which falls to the feet in numerous pleats. The drapery is again depicted in a sheer style. The *himation* is pulled across the lower body, under the breasts and around the back of the figure to fall from the shoulder over the left arm, with a portion of this cloth tucked into the other end of the fabric. The left hand is visible holding the *himation* in place.

The figures are rendered in relatively deep relief with both of the seated figures' legs and much of the upper torso fully modelled, and only the outer edge of the left arm and hand merging into the relief field. A plinth-like base is formed by the thick lower part of the relief. The side of the stele is finished but the back of the piece was left in roughly worked state. Clairmont observed an ›Attic treatment‹ to the piece, particularly in the light chisel marks observable on the right hand side of the relief. He suggested that it was of Attic workmanship, and therefore specially imported for an important client. Bergemann suggested a date of 360–330 B.C. on stylistic grounds, which is certainly feasible, though it is difficult to be precise when the piece is in such fragmentary condition.

Date: Fourth century B.C.

Find spot: Skopje fortress.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 53 (old inv. 931).

Literature: Vulić 1931, 240 no. 640; Sokolovska 1987, 24 fig. 2.; Clairmont 1993, 221 f. no. 3.366c; Bergemann 1997, 173 no. 561.

2 ›Totenmahl‹ Grave Stele

Sample SK13: Unknown calcite, probably local quarry. H 125; W 52; Th 17.

Condition: The top of the stone has been reworked so that the central *palmette* was cut straight. The lower right portion of the stone is broken off and missing. The surface of the relief is very eroded and pitted. There are a number of cracks and the heads of the principle figures have broken off.



Cat. 1

140 All dimensions are in centimetres.



Cat. 2

Description: The rectangular relief panel is set at the top of the stele and depicts the figures in shallow relief. The composition focuses upon the male figure shown reclining on a *kline*, wearing a *chiton* with his *himation* draped across his lower torso and around the back of the body to emerge from beneath him so that the end trails from his left hand over the edge of the *kline*. The man is depicted lying on his left side with his right knee slightly raised, and his upper torso supported on the left elbow, which rests on a cushion. He is shown holding a cup in the left hand, while the right arm is relaxed at his side. The head of this figure is badly damaged, but the raised stone indicates that it may have been bearded. The *kline* is draped with swags, and there is an elegant three-legged table covered with food situated in front of it. To the viewer's right is a large, fluted krater with a high foot, which is accompanied by a tunic-wearing attendant, who is shown on a diminutive scale looking up at his master. A seated woman is positioned at the foot of the *kline* and is shown in three-quarter view. This figure is depicted wearing a pleated *chiton* that falls to her feet with a *himation* drawn behind the head, which she adjusts with her right hand, while the left hand holds the folds of cloth in her lap.

The figures behind the *kline* are shown in much shallower relief. On the viewer's right there is a tree with a snake coiled around it. In the centre, a horse with a specially pleated mane is depicted facing the tree and accompanied by two male figures shown in profile. The larger of these attendants reaches a hand up to the horse's mouth or bridle. The smaller male is shown in profile walking towards the side of the relief where the woman is seated.

The back of the stele is roughly worked. In composition and figure type the piece resembles contemporary images produced at Beroia, but stylistic details, such as the rendering of the horse's mane, are distinct, which may indicate that it was produced by a local workshop familiar with Beroian examples.

Date: Second or first century B.C.

Find spot: Heraclea Lyncestis.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 142.

Literature: Vulić 1933, 12 no. 15; Bitrakova–Grozdanova 1987, 116–118 pl. I 3; Sokolovska 1987, 27 fig. 7.

Myrina Kalaitzi pers. comm.



Cat. 3

3 Honorary Inscription

Sample SK23: Thasian dolomite. H ca. 20; W ca. 18; Th 6.

Condition: Broken on all sides.

Inscription: [- - - - -] | [Pro incolum]itate | [Neronis Claudii div]i Claudii f(ili) | [Germanici Caesaris nepo]tis Ti(berii) Caesar | [is Augusti pro]nepotis | [Caesaris Augusti pontifici] maximi | [trib(uniciae) pot(estatis) - - - - -].

Date: Neronic.

Find spot: Isar–Marvinci.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 322.

Literature: Dragojević–Josifovska 1967, 318 figs. 14. 15.

4 Grave Medallion

Sample SK21: Thasian dolomite. H 76; W ca. 63; Th 13.

Condition: The piece has been restored but the diagonal line dividing the relief into two pieces is still visible. Only the bottom of the medallion is preserved to the edge. The upper portion of the relief has fared less well than the lower, and the outer portraits on this row are not complete.

Description: The grave medallion shows six portraits set within a slightly raised round frame, which has a central rosette at the bottom. The preserved portion of the outer edge of this frame is decorated with egg-dart motif. The relief is thicker at the bottom than the top for stability. The figures are shown arranged in two rows of three subjects: the bottom row comprises a bearded male to the (viewer's) left, a young boy at the centre, with a female subject on the right. The top row shows a lightly bearded young male on the left, a bearded male at the centre with the third subject's gender difficult to ascertain because of its fragmentary condition. Rüschi believed it to be male, but the upper part of the ears appears to be covered by hair, which is only seen on this relief with the female's hairstyle. All of the subjects are shown wearing *himation* and *chiton*. All have rounded features with slightly protruding ears and almond shaped eyes, with neither the iris, nor the pupil, incised. The male on the top left is shown with his hair drawn forwards from the crown in a style popularised by the emperor Trajan, but while the emperor was shown clean-shaven, this figure has a stubbly beard indicated with a series of chisel incisions. The figure next to him, at the centre, appears in a personal style associated with the emperor Hadrian. His short full beard is modelled and the hair is drawn forwards from the crown to fall in a series of roll-locks around the face. The figure to the right lacks facial hair and has rounded features. The bottom row has another male in similarly ›Hadrian-like‹ style on the bottom left. The young boy at the centre is smaller in scale to the other images and has ›Trajan-like‹ hair. Next to him, the female figure is shown with her hair drawn up on top of her head in three modelled pleated braids with the hair sections further defined with chisel strokes. The portraits reflect the range of personal styles embraced by different individuals in the early second century and most probably belong to the Hadrianic period.

Date: Hadrianic.

Find spot: Gevgelija/Dojran.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 52.

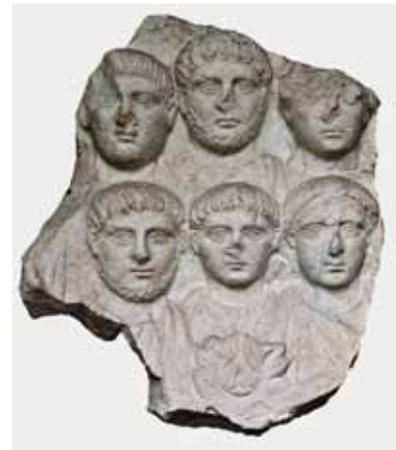
Literature: Vulić 1931, 55 no. 121; Dimitrov 1939, 65 fig. 88; Dimitrov 1945–1946, 37 no. 21 fig. 31; Rüschi 1969, 186 cat. M4 fig. 101; Sokolovska 1987, 113 no. 25 pl. 12 fig. 4.

5 Votive Rider Stele

Sample SK17: Thasian dolomite. H 63; W 54; Th 13.

Condition: The lower, right portion of the relief is broken away and missing, as are the horse's front hooves. The surface of the relief is very eroded and pitted making details indistinct.

Description: The ›Thracian rider‹ image is depicted here within a rectangular frame, which is surmounted by a triangle fronton with *acroteria*. The central scene shows a male figure hunting on a galloping horse, accompanied by a running dog. Both are moving in pursuit of a boar which appears facing them, on the viewer's right, below a tree, which has a snake entwined around its trunk and boughs. The dog and the boar are depicted in profile, while the man and horse are twisted towards the viewer. The rider is shown with the right arm raised – a lance may have been added in metal, wearing a short girt *chiton* and



Cat. 4



Cat. 5

boots, with his *chlamys* billowing out from the neck behind him and over the boundary of the architectural frame. The facial features were modelled, and traces of worked ear, eyes, nose and mouth are faintly apparent but not well preserved. The hair is drawn forwards onto the brow. The rearing horse has the reins traced across the neck, and a portion of the bridle is perhaps present at the cheek, though a hole at the mouth suggests that the majority may have been added in metal. The outline of an animal-hide saddle blanket is faintly apparent. The strands of the horse's mane have been differentiated, as have the hooves and the hair of the flowing tail. The boar is shown with its snout raised emerging from behind the tree; both boar and dog are less carefully worked than the rider and his horse. The snake encircling the tree has its coils extending beyond the frame of the relief. The head is modelled and shown in the foliage of the tree. The back of the relief was smoothly and evenly finished.

On the lower part there is an inscription:

Ἡρωὶ ἐπῆκοφ' Ροῦφ[ος]
 Ρούφου κατ' ἐπιταγῆν·
 ἔτους ε ι τ' Ἀρτεμ(ισίου).

Date: A.D. 168.

Find spot: Isar-Marvinci.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 359.

Literature: Babamova 2005, 137 no. 83 pl. 23.

6 Ephebic List

Sample SK7: Sivec dolomite. H 110; W 40; Th 23.

Condition: Top broken.

Description: Rectangular plaque with an inscription numbering the names of the *ephebarchos*, the *tamias* and 29 *ephebes*.

Date: A.D. 41–48.

Find spot: Styberra.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 376.

Literature: Vučković–Todorović 1963, 80 f. pl. 19, 33; Papazoglou 1988, 236 f. no. 1 (SEG 38, 675); IG X 2, 2 no. 323 pl. 45; Babamova 2005, 83–85 no. 9 pl. 3.

7 Ephebic List

Sample SK10: Sivec dolomite. H 292; W 44; Th 18.

Condition: Broken in three parts, none missing.

Description: Column with *ephebic* lists for three years, enumerating the names of the *gymnasiarches*, the *ephebarchoi*, and 103 *ephebes*.

Date: A.D. 74/75, 87/88 and 107/108.

Find spot: Styberra.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 271.

Literature: Vulić 1941–1948, 184–186 no. 388; Papazoglou 1988, 238–240 nos. 5. 7. 9 (SEG 38, 679. 681. 683); IG X 2, 2 no. 325 pl. 46; Babamova 2005, 86–93 nos. 13. 15. 18 pl. 4.

8 Pedestal for a Bust of Philoxenus

Sample SK24: Sivec dolomite. H 58; W = Th 25.

Condition: Right and top part of the upper *cymation* broken.

Inscription: Φιλό|ξενος.

Date: After A.D. 127.

Find spot: Styberra.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 351.

Literature: Vučković–Todorović 1963, 78 pls. 17. 28; IG X 2, 2, 342.



Cat. 9

9 Statue in ›Large Herculaneum Woman‹ Type

Sample SK20: Sivec dolomite. H preserved 195 (base 20); W of base 74; Th of base 42.

Condition: The figure was found in three main pieces: broken in two at just below the knee, with the (viewer's) left portion of the base broken off. The statue has been restored with the line of these breaks clearly visible. The head was integral to the figure and has been cut off at the neck. The surface of the piece is chipped. The following are broken away and missing: the fingers of the right and left hands, the drapery about the figure's left hand. There are white concretions across the surface of the statue, particularly on the front of the figure.

Description: The statue shows a veiled female figure standing with her weight on the right leg, with the left leg slightly flexed, wearing *chiton*, *himation* and sandals. The *himation* is depicted drawn across the body, over the figure's right arm and shoulder, around its back and then pulled across the body with the right hand to create the distinctive triangular fold which is typical of this figure type. The rest of the *himation* hangs from the subject's left shoulder, draped about the left arm and clasped in the left hand. The richly pleated, long *chiton* has an unusually pronounced neck band, which is a distinctly local addition to this type. The sandals have the thong between the toes carefully defined with small lapette detail added. The statue is worked in one piece with the plinth with a drilled channel differentiating the folds of chiton and feet from the roughly modelled plinth. The piece is of relatively high quality with details such as fingernails and toenails carefully worked, the skin polished and the dif-



Cat. 10

ferent textures of *chiton* and *himation* fabric defined through contrasting finish. The back of the figure is flatter than the front with the drapery modelled in light relief. The plinth has clamp marks on either side, and the surface has been smoothed on the top, while the sides retain traces of point chisel indicating that it was designed to be countersunk into the base and held in place with the clamps. The interest in texture effects is typical of products of the second century A.D. and particularly of the Antonine era, but as the figure lacks its head, precise dating is difficult.

Date: Second century A.D.

Find spot: Styberra.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 4.

Literature: Vulić 1941–1948, 188 no. 390; Sokolovska 1987, 158 f. no. 108 pl. 45 fig. 1; Alexandridis 2004, 242 no. 126; Trimble 2011, 377 no. 32.

10 Cuirassed Statue

Sample SK18: Sivec dolomite. H preserved ca. 105; W 55; Th ca. 26.

Condition: The statue is preserved from the knee, to the neck. The following elements are broken off and missing: head, left knee, the figure's right and left arm from the elbow. The surface of the stone is chipped.

Description: The statue shows a male figure stood with its weight on the right leg with the left slightly advanced. The head of the statue was integral to the body. The subject is depicted wearing armour, a dress choice associated particularly with the emperor or other male member of the imperial family (although high ranking officials wielding imperium were sometimes represented wearing military cuirass in the late first/early second century). This costume comprised a short-sleeved, knee-length tunic, with a leather jerkin over it, which is visible in the tasselled sleeves and also forms the skirt of tasselled lappets. The skirt of this particular version has a double-row of *pteryges*, the lunette shape of which is outlined to form a crescent, but without any further decoration. Over this jerkin the subject wears a muscle cuirass with *cingulum* tied around the waist in a 'Heracles knot' and a *paludamentum* draped from the figure's left shoulder. The cuirass has a gorgon's head with snakes tied beneath the chin at the centre, and the straps of the cuirass are shown tied at the right shoulder. This armour is comparatively simply adorned compared to other examples, which suggested to Stemmer that it was of local workmanship. The position of the figure's right arm is uncertain while the left arm was bent forwards at the elbow. The forearm was joined to the statue by an internal iron dowel, which is visible at the elbow. The arm would have had the cloth of the *paludamentum* draped over it, and the latter would then have descended to the ground serving to support the statue. The fabric is to be seen at the back of the figure gathered under the arm. The surface of the lappets on the left side of the statue is damaged from where the cloth of the cloak was once joined to the figure. The *pteryges* at this side of the statue are only summarily worked because they would have been covered by this depiction of *paludamentum* fabric. The local sculptors worked all the parts of the figure that were likely to be seen, but did not expend effort on finishing less visible details, such as these *pteryges*. Stemmer proposes a Trajanic date based upon his assessment of cuirass design, but without the figure's head it is difficult to be precise.

Date: Second century A.D.?

Find spot: Ceramiae/Varoš.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 346.

Literature: Vulić 1941–1948, 171 no. 357; Stemmer 1978, 65 f. no. V18 pl. 41, 3; Sokolovska 1987, 136 f., no. 57 pl. 29 fig. 4.

11 Corinthian Capital with Console

Sample SK8: Sivec dolomite. H 48; diameter 39; W console 40, abacus 53; L preserved 64.

Condition: Leaf tips, the outer helices and the corners of the abacus broken off.

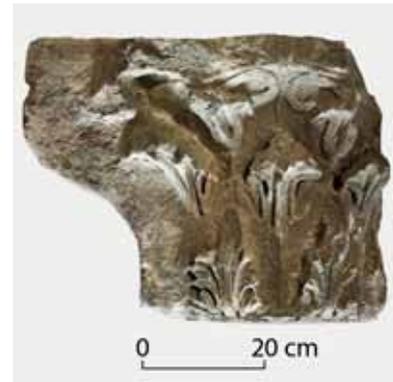
Description: One side of the capital is taken up by a console. The other three with two rows of six and seven stiff-pointed acanthus leaves; caules, inner helices in relief, outer helices à-jour; abacus with central blossoms routed between the inner helices. Console: three vertical partitions, the central one scaled, the outer partitions each with an ivy creeper. Lower side with central dowel hole.

Date: Second century A.D.?

Find spot: Bitola.

Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Vulić 1931, 21 no. 40; Lilčić 2001–2002, 193. 197.



Cat. 11



Cat. 12

12 Statue Wearing Himation without Chiton

Sample SK12: Sivec dolomite. H preserved 129; W ca. 58; Th 29.

Condition: The head is broken off and missing, as are the lower legs and feet, the figure's right shoulder and a portion of the right biceps. The surface of the piece is chipped, pitted and eroded.

Description: The statue shows a mature male standing with his weight on the right leg, with the left leg forwards and flexed at the knee. The figure wears a *himation* which is draped over the left shoulder, pulled across its back and then drawn across the lower torso and left arm, where it falls in folds to a small, raised, oval-shaped *capsa*. The right arm holds the folds of cloth in place, while the left arm is bent forwards with a book roll held in the hand. The bare torso is modelled to indicate the pectorals and full stomach of a robust, mature man. The statue is represented in clothing which had traditionally been used as civic Greek dress in the fifth and fourth centuries B.C., but which was employed in the Roman period to represent philosophers, and more generally to evoke the subject's learning. The folds of the *himation* are not deeply worked, and details such as the hands are lightly modelled without the gaps between the fingers fully traced. The back of the figure is flatter with the folds of the *himation* less modelled and traces of the chisel apparent. The style of the piece suggested to Sokolovska a third century date, which seems feasible, though certainty on these grounds is not possible.

Date: Second to third century A.D.?

Find spot: Heraclea Lyncestis.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 13.

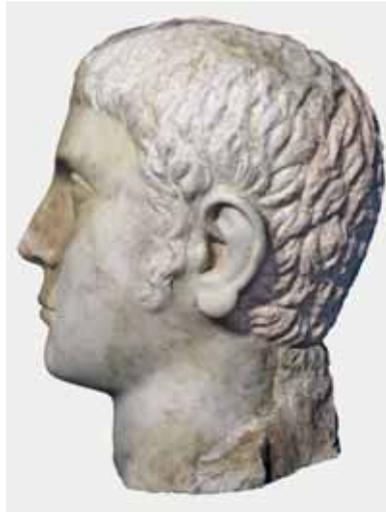
Literature: Vulić 1931, 21 no. 39; Mačkić – Mikulčić 1961, 61 fig. 80; Sokolovska 1987, 153 no. 98 pl. 42 fig. 1.

13 Male Portrait Head

Sample ST19: Sivec dolomite. H 30; W 20; Th 21.

Condition: The head is broken horizontally through the neck. The tip of the portrait's left ear is missing. There is ferrous discolouration on the neck and face, particularly to the back of the dress folds on the figure's left side. Two small circular holes (ca. 1–1,5 mm) are apparent in the fringe on the front of the head.

Description: The portrait represents a young man, shown with smooth skin, full mouth, rounded cheeks and strong jawline. The figure's head is turned a little to its left and the large eyes are shown with a slightly elevated gaze. The



Cat. 13

sculptor has outlined the hairs of the eyebrows with a chisel to frame large eyes that dominate the face. The eyes have carefully worked, heavy upper lids; the iris traced with a chisel, and the pupils are drilled to create a bean-shape. The tear ducts have also been worked with the drill and the edge of the eye is outlined with a chisel. The skin has been polished to give the piece a flesh-like sheen. The nose is faintly aquiline and has the nostrils carefully defined with the drill. Side-burns have been modelled, and the details of the interior of the ears and flaring earlobes are carefully finished. A fringe composed of numerous short sickle-like locks encircles the face. The short, slightly wavy hair is depicted brushed forwards from the crown with differing levels of detail: the back of the head is very summarily worked, the top is only lightly modelled, while the front has received greater attention to render the two rows of locks which frame the face. The folds of the subject's dress are visible either side of the neck. There is an unworked neck support at the back, which served to brace the image at the nape of the neck. It is unclear whether the head belonged originally to a bust, statue or *kline* monument.

The technique used for drilling the eyes, (with two holes made to form a slight u-shape and lightly incised iris), is one practiced in the Antonine period and the rendering of polished skin, heavy lids, and interest in textural effects in the sideburns also fit that date. Although this era saw metropolitan fashions of artificially curled hair and beards, which are absent here, there were a range of different personal styles embraced around the Empire. This individual is depicted without the highly stylised artifice of male grooming that was popular at this time, but his short straight hair would not have been an exceptional personal style in this period.

Date: Antonine.

Find spot: Stobi, during the excavation of the arcaded building at the Forum, niche D1: <<http://www.stobi.mk/Templates/Pages/Excavations.aspx?page=190>> (09.06.2013), Silvana Blaževska.

Location: Stobi, depot.

14 Frieze

Sample ST14: Sivec dolomite. H 44; L 67; Th 9,5.

Condition: Lower right corner broken; upper right corner with helix broken off.

Description: Right end of a frieze that continues towards the left: undulating fine-toothed acanthus enclosing four-lobed blossoms. Below an egg and dart frieze. At the right end half a pointed acanthus leaf and a helix.

Date: End of the first – beginning of the second century A.D.

Find spot: Stobi, arcaded building at the Forum, niche D1.

Location: Stobi, depot inv. A-07-10.

Literature: Jakimovski – Shurbanoska 2010, 34 f. 48 fig. 37.



Cat. 14

15 Corinthian Capital

Sample ST12: Sivec dolomite. H 65; diameter 45; abacus ca. 80 × 80.

Condition: Part of the base, leaf tips and the corners of the abacus broken off.

Description: Two rows of eight stiff-pointed acanthus leaves. Caules; inner helices in relief; outer helices à-jour. Plain abacus with central blossoms routed between the inner helices.

Date: Mid second century A.D.

Find spot and location: Stobi, theatre inv. A-71-51.

Literature: Nikolajević-Stojković 1957, fig. 1.



Cat. 15

16 Architrave

Sample ST13: Sivec dolomite. H 79; L preserved 250; Th 65.

Condition: Upper ledge partly broken off.

Description: Three *fascies*, moulding, empty stripe, upper ledge.

Date: Mid second century A.D.

Find spot and location: Stobi, theatre.



Cat. 16



Cat. 17

17 Corinthian Capital

Sample SK9: Sivec dolomite. H 33; diameter ca. 40; abacus 50.

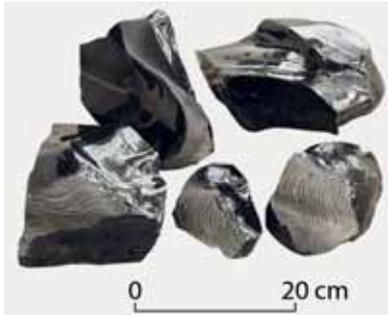
Condition: Part of the base, leaf tips, the outer helices and the corners of the abacus broken off.

Description: Two rows of eight stiff-pointed acanthus leaves with four lobes per leaf. Caules; inner helices in relief; outer helices à-jour. Stepped abacus, central protrusions covered with leaves.

Date: Third century A.D.?

Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Cf. Nikolajević-Stojković 1957, figs. 3–11 (all at Stobi and with touching leaf tips); Lilčić 2001–2002, 372 f. (in Ohrid).



Cat. 18

18 Worked Obsidian Image

Sample ST1. Largest piece: 15 × 10 × 7.

Condition: Broken in five pieces.

Description: Some of the preserved pieces have carefully incised strands of hair worked into a surface that undulates to follow these lines. Other portions of the obsidian have been smoothed to create a more matt, flesh-like contrast. Judging from what remains, the craftsmanship is extremely fine. Unfortunately, the condition of the piece makes it difficult to ascertain, at present, what this object represented.

Date: Roman?

Find spot: Stobi, during the excavation of the arcaded building at the Forum: <<http://www.stobi.mk/Templates/Pages/Excavations.aspx?page=190>> (09.06.2013), Silvana Blaževska.



Cat. 19

19 Infant Dionysus or Putto Wearing Garland of Corymbs and Ivy

Sample ST17: Unknown yellow calcite. H 11; W 9; Th 8.

Condition: The tip of the nose is broken off and missing, as is the lower lip and a portion of the chin. The left side of the face has been struck and the impact of the damage is apparent radiating from this point. The surface is chipped in places, particularly about the forehead.

Description: The head shows an infant with childish rounded features: full cheeks, a flat nose, and large eyes. The sockets of the eyes have been hollowed out, presumably because the eye itself was inserted in some other material. The drill was used to define the tear ducts, part the lips, and to indicate the nostrils and the interior of the ears. It was also used around the garland to work beneath some of the leaves, stem, and flowers to create depth and to enhance the distinction between the garland and the hair, which is rendered with the chisel and shown brushed forwards to form a slight central quiff. The garland does not meet at the front, instead, the tendrils are shown drawn forwards from the back of the head and over the top of each ear to terminate in two sprigs with two prominent corymbs at each temple.

The stone is strikingly yellow in appearance and the skin is polished. The majority of the figure is worked in the round, except for the final ca. 5–10 % of the back of the figure, which is flat and smoothly worked. The piece resembles the small-scale *giallo antico* products, which by the second century were found widely distributed in Rome and the provinces. This *giallo antico* was often used, on a similarly miniature scale, to represent barbarians, animals, or subjects of a similarly Dionysiac theme to this head. Such pieces were sometimes worked in the round, but often consisted of small herms, or pieces applied as decoration to other surfaces, as seems to have been the case with this head. However, *giallo antico* marble was extracted from quarries in the hills around Chemtou, Tunisia (ancient Simitthus) and despite the strong resemblance in colour and iconographic theme the marble analysis of this piece does not suggest such an origin for the stone.

Date: Second century A.D.?

Find spot: Stobi, during the excavation of the temple of Isis with hypogeum: <<http://www.stobi.mk/Templates/Pages/Excavations.aspx?page=189>> (09.06.2013), Silvana Blaževska.

Location: Stobi, depot.



Cat. 20



Cat. 21

20 Crater

Sample ST8: Pentelic calcite. H foot 38, crater ca. 95, base 41 × 41; diameter inside ca. 50, outside ca. 70.

Condition: Broken in many pieces, but none missing.

Date: Roman.

Find spot and location: Stobi, Episcopal Basilica, baptistery.

21 Statue of Aphrodite in ›Pudica-Type‹

Sample ST16: Unknown calcite, possibly from Aphrodisias in Caria. H preserved 105; W 40; Th 25.

Condition: The statue is in fragmentary condition and work is in course to conserve and restore the piece. The torso is preserved from the neck to the upper thigh, including the figure's right arm to above the wrist and the top of the left arm. The right thigh has been reattached. Other sculpted body parts, including the figure's left thigh, calf, portion of the upper left arm, and foot have also been recovered. The inscribed base, with a portion of the statue's drapery support, is preserved.

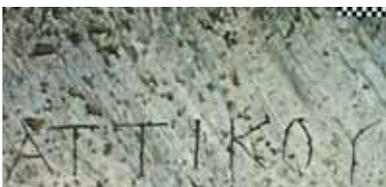
Description: The preserved torso shows the nude goddess bent slightly forwards with her right arm reaching down to ›cover‹ her genitalia, and joined to the statue at the hip. This arm is adorned with a band around the biceps. The position of the left arm inclines backwards slightly and would probably have reached towards a side support draped with fabric in the style established with Praxiteles' famous, and much evoked, Cnidian Aphrodite (LIMC II [1984] nos. 391–408 s. v. Aphrodite [A. Delivorrias – G. Berger-Doer – A. Kossatz-Deichmann]). Alternatively, it is possible that the left arm reached across to cover the breasts, but this is more commonly the role of the right arm (see for example the ›Capitoline type‹ or ›Medici type‹ in LIMC II [1984] nos. 409–418. 419–421 s. v. Aphrodite [A. Delivorrias – G. Berger-Doer – A. Kossatz-Deichmann]). The figure's fleshy thighs are firmly pressed together, the navel is indented and the figure's full breasts have the nipples modelled. The stomach is slightly rounded. The skin is smoothly polished across the entire surface of the figure including the back. The indentation of the spine is well modelled, as are the rounded buttocks.



Cat. 22



Cat. 23



Cat. 24

Date: Second century A.D.?

Find spot: Stobi, 2009 during the excavation of the arcaded building at the Forum: <http://www.stobi.mk/Templates/Pages/Excavations.aspx?page=190> (09.06.2013), Silvana Blaževska.

Location: Stobi, depot.

Literature: Babamova 2012, cat. 1 (inscribed base).

22 Anta Capital

Sample SK11: Unknown calcite, from Aphrodisias in Caria? H 29; W 50; Th 37. Condition: Leaf tips, some helices, and part of the abacus broken off.

Description: Four pointed acanthus leaves at the corners are connected by an egg and dart frieze and flanked by outer helices with massive volutes. The remaining space between the helices is taken up by various plants. Stepped abacus with central blossoms routed between the inner helices.

Date: Roman.

Location: Museum of Macedonia – Skopje, Archaeological Museum.

23 Corinthian Capital

Sample SK2: Unknown calcite, from Ephesus? H 63; diameter 60; abacus 95. Condition: leaf tips, some helices, and parts of the abacus broken off.

Description: Two rows of eight stiff-pointed acanthus leaves with four lobes per leaf and an incised tendril on the stem. Slight inner and massive outer helices. Stepped abacus with elaborate blossoms. Upper side with a variety of unexplained holes.

Date: Third century A.D.?

Find spot: Lopate.

Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Vulić 1941–1948, 99 no. 218; Nikolajević–Stojković 1957, fig. 13; Lilčić 2001–2002, 130 f. 609.

24 Seat

Sample ST9: Unknown calcite, probably local quarry near Stobi.

Inscription: ΑΤΤΙΚΟΥ.

Date: Mid second century A.D.

Location: Stobi, theatre, fourth cercis, second row, next to the central corridor.

Literature: Wiseman 1993.

25 Seat

Sample ST10: Unknown calcite, probably local quarry near Stobi.

Date: Mid second century A.D.

Location: Stobi, theatre, next to seat cat. 24.

26 Heroon Inscription

Sample SK22: Unknown calcite, probably local quarry near Stobi. H ca. 99; W 75; Th 15.

Condition: Broken and mended, corners broken off, but otherwise complete.

Description: Rectangular plaque with an inscription:

[-----ς] Λύκιος | [ἐπ]οίησεν τὸ ἥρωον ζῶν | [ἐ]αυτῷ μνήμης *vac.* χάριν. | Βούλομαι δὲ καὶ τὴν σύμβιον ἰς εἰς τὸ αὐτὸ οἶκημα τεθῆναι. | Αποτεθέντων δὲ ἡμῶν κλείσουσιν τὴν ἔσω θύραν τῷ καγκέλλῳ, ἐξὸν δὲ οὐκ ἔσται ἀνυλῆναι τὸν κάγκελλον, οὐκ ἐξὸν | 10 δὲ ἔσται εἰς τοῦτο τὸ ἥρωον ἀποτεθῆναι ἕτερον. Ἐὰν δὲ τις | παρὰ τὰ ἐγγεγραμ[μέν]α ποιήσῃ, | δώσει τῷ ἱεροτάτῳ ταμείῳ δηνάρια μύρια πεντάκις χεῖλια. | 15 [Β]ούλομαι δὲ οὖς ἂν [κ]αταλίπω | [ἐπ]ιμένειν τῷ ἥρωῳ ἔχειν αὐτοῦ | [τὰς ὁδ]οὺς τὰς ἐγγὺς τοῦ ἥρ[ῶ]ου | [-----].

Date: Second century A.D. according to the letter forms; cf. Babamova 2005, 68–73.

Find spot: Palikura.

Location: Museum of Macedonia – Skopje, Archaeological Museum inv. 263.

Literature: Vulić 1941–1948, 41 no. 91; Babamova 2012, cat. 62.



Cat. 26

27 Statuette of Hygeia

Sample ST18: Unknown calcite, possibly local quarry near Stobi. Torso: H 37; W 36; Th ca. 18. Leg: H 28,5; W 31,5; Th ca. 16.

Condition: Two pieces of the statuette are preserved: the torso from the shoulder to the upper leg and a lower portion of the legs from above the knee to the mid-shin. The forearms are broken off and missing. The surface of the piece is chipped, and portions of the drapery are missing. It is covered in white concretions. The lower fragment is also in chipped condition.

Description: The statue represents Hygeia standing with her weight on the left leg, with the right knee forwards and flexed. Both arms are bent at the figure's side with the forearms extended forwards. A snake is visible slithering up the right side of the body; judging from what remains it would probably have encircled the missing right forearm to stretch towards a phiale held in the missing left arm, as in the ›Broadlands type‹ (LIMCV [1990] nos. 63–95 s. v. Hygeia [F. Croissant]). The animal has been carefully worked, with the scales individually modelled and defined with a chisel; its coils are shown in the round in places, separated from the goddess' body. Hygeia is represented here wearing a *chiton*, with a rounded neckline, which is girt with a prominent knot just below the breast, and has sleeves that fall to the elbow. The pleats of the *chiton* form a v-shape over the goddess' flat chest. The *himation* moves from under the figure's right arm, around the back of the body over the left shoulder from where part of it is wrapped about the left arm and the rest arches, in a thick bundle of folds, across the body to cover the lower part of the torso. This dress style is similar to the ›Broadlands type‹ but the *himation* is more voluminous in form and is drawn higher across the chest and lower across the body (more like the ›Heraklion type‹, LIMCV [1990] 116–130 s. v. Hygeia [F. Croissant]). The head was integral to the statuette and the back of the figure is flat with the folds of the *himation* only indicated in shallow relief.

Date: Second century A.D.?

Find spot: Stobi, during the excavation of the temple of Isis with hypogeum: <<http://www.stobi.mk/Templates/Pages/Excavations.aspx?page=189>> (09.06.2013), Silvana Blaževska.

Location: Stobi, depot.



Cat. 27



Cat. 28



Cat. 31



Cat. 29



Cat. 30

28 Spiral Column Shaft

Sample ST3: Calcite from Pletvar. H preserved 70; diameter 40.

Date: Roman.

Find spot and location: Stobi, Theodosian Palace.

29 Corinthian Capital

Sample ST4: Calcite from Pletvar? H 62; diameter 42; abacus preserved 54.

Condition: Leaf tips, helices and abacus broken off.

Description: Two rows of eight stiff-pointed acanthus leaves with four lobes per leaf. Caules and helices.

Date: Roman.

Find spot and location: Stobi, sixth-century house east of the semi-circular court.

Literature: Nikolajević-Stojković 1957, fig. 7.

30 Corinthian Capital

Sample SK16: Calcite from Pletvar. H 26; diameter 26; abacus 43.

Condition: Breakage at the base, probably caused by the dowel.

Description: Eight leaves: four larger ones at the corners, interspersed with four smaller ones in the middle of each side; the larger leaves each with four lobes of soft pointed acanthus, the smaller leaves of varying shape and crowned by a twisted rope. Large inner helices cover a bulging core. The abacus is plain.

Date: Late Roman.

Find spot: Stobi, Basilica Extra Muros.

Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Filipova 1998, 172 pl. 24, 3 a-c; Lilčić 2001–2002, 868–873.

31 Corinthian Capital

White marble with grey veins.

Condition: Base and corner broken off.

Like cat. 30.

Date: Late Roman.

Location: Stobi, Basilica Extra Muros.



Cat. 32

32 Column Shaft

Sample ST20: Calcite from Pletvar. H preserved 210; diameter 35.

Condition: Lower end broken off.

Description: Stepped neck ring.

Date: Roman.

Find spot and location: Stobi, Basilica Extra Muros.

33 Acanthus Leaf

Sample SK25: Unknown calcite (Thasos?). H ca. 9; W ca. 10; Th ca. 7.

Condition: Base and tip broken.

Stiff-pointed acanthus leaf with two lobes.

Date: Roman.

Find spot: Scupi, »Mikrostanben complex«, quadrant 90-89-99-79/E8, stratum 4, i. e. houses in the centre of Scupi that were erected after the earthquake of 618.

Location: Scupi inv. 11773.

34 Pedestal and Base

Sample ST7: Unknown calcite. H 79, column base 27; Base 69,5 × 69,5; diameter ca. 38.

Condition: Surface partly broken off.

Description: Square pedestal and Attic column base. The pedestal is decorated with mouldings at the bottom and at the top as well as a central medallion that contains a Christogram in the shape of a cross with the upper arm doubling as the rho. Upper side with central dowel hole.

Date: Fifth century A.D.

Location: Stobi, Episcopal Basilica, southern entrance to narthex.

Literature: Saria 1933a, 116 fig. 44; Nikolajević-Stojković 1957, fig. 127; Sodini 1977, 445 f. fig. 46.

35 Ionic Impost Capital

Sample ST2: Unknown calcite. H 31; diameter 31; abacus 44 × 62 (preserved).

Condition: One volute partly broken off.

Description: Unfinished, picked surface. Ionic part: one central egg flanked by two darts and two volutes; one of the cushions that draw in at the back of the volutes contains a central groove for the insertion of a window or some such partition. On the lower side a central dowel hole contains some lead.

Date: Late antique.

Find spot and location: Stobi, Central Peristyle = House of Polyharmus.



Cat. 33 (M. 1 : 3)



Cat. 34



Cat. 35



Cat. 36



Cat. 37



Cat. 38



Cat. 39

36 Ionic Impost Capital

Fine-grained white dolomite. H column 184, capital 21; diameter column 28–23, capital 23; abacus 37 × 48.

Description: Fluted impost and cross.

Date: Fifth century A.D.

Find spot and location: Stobi, Episcopal Basilica, baptistery.

37 Ionic Impost Capital

Sample ST5: Sivec dolomite. H 33, ionic part preserved 9; lower side 50 × 58; abacus 65 × 91.

Condition: Lower half of the Ionic part cut off in order to reuse the capital as an impost.

Description: Ionic part and impost separated by a bead and reel string. Impost with one whole leaf of pointed acanthus flanked by two half ones that are turned outwards instead of inwards as usual (cf. cat. 38) and separated by spiral columns. Sides and back without relief.

Date: Fifth century A.D.

Find spot and location: Stobi, Episcopal Basilica inv. A-73-44 = architecture-1973-no. 44.

Literature: Egger 1929, 53 fig. 38; Kitzinger 1946a, fig. 133; Nikolajević-Stojković 1957, fig. 63; Hoddinott 1963, pl. 39 c; Sodini 1977, 445 f. fig. 47.

38 Impost

Sample ST6: Sivec dolomite. H 41; lower side 52,5 × 52,5; abacus 68 × 86 (preserved).

Condition: Corner broken off.

Description: One whole leaf flanked by two half ones, narrow pointed acanthus, six lobes per leaf.

Date: Fifth century A.D.

Find spot and location: Stobi, Episcopal Basilica inv. A-73-36.

Literature: Egger 1929, 51 f. fig. 36; Nikolajević-Stojković 1957, fig. 101.

39 Impost Capital

Sample SK5: Sivec dolomite. H 30; diameter 36; abacus ca. 42.

Condition: One half broken off.

Description: Similar to an Ionic impost capital, but no volutes and a round base with a circular egg and dart frieze flanked by an astragal below and a bead and

reel string above. Impost: central acanthus leaf with long winding lobes that branch out at the top and turn in again at the bottom.

Date: Fifth century A.D.

Find spot: Stobi, Episcopal Basilica.

Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Egger 1929, 57 f. fig. 49; Nikolajević-Stojković 1957, 19 fig. 74. 75.; Lilčić 2001–2002, 846 f.

40 Theodosian Capital

Sample ST11: Sivec dolomite. H 75; diameter ca. 45; abacus 78 × 78.

Condition: Breakage at the base that was probably caused by the dowel, as well as at the corners.

Description: Two rows of eight fine-toothed acanthus leaves with four lobes per leaf. The egg and dart frieze and the volutes above have retained drill holes and seem to be unfinished. Plain abacus.

Date: Fifth century A.D.

Find spot: Stobi, Episcopal Basilica.

Location: Stobi, in front of the theatre inv. A-73–35.

Literature: Saria 1933a, 124 fig. 55; Nikolajević-Stojković 1957, fig. 33; Nikolajević 1981, 186 fig. 2; Hoddinott 1963, pl. 38 b.

41 Composite Capital

Sample Stobi 3 (2010): Sivec dolomite. H 75; diameter ca. 51; abacus 80.

Condition: Breakage and later repairs at the base.

Description: Two rows of eight broad-pointed acanthus leaves with four lobes per leaf. A lotus frieze instead of the customary eggs and darts. Scaled abacus, central protrusions covered with leaves.

Date: Fifth century A.D.

Find spot: Stobi, Episcopal Basilica.

Location: Belgrade, National Museum.

Literature: Egger 1929, 48 fig. 30; Nikolajević-Stojković 1957, fig. 32; Hoddinott 1963, 166 pl. 38 a; Daim et al. 2010, 247 f. cat. 237; Niewöhner – Prochaska 2011, 434. 437.

42 Eagle Capital

Sample SK1: Sivec dolomite. H 67; diameter 50; abacus 83.

Condition: *à-jour* work partly broken off.

Description: One ring of eight pointed acanthus leaves surmounted by four eagles with spread wings below the corners of the scaled abacus. The central protrusions of the abacus are overgrown by acanthus that is creeping up from in-between the wings of neighbouring eagles.

Date: Fifth century A.D.

Find spot: Čičevo (Saria 1933a, 125).

Origin: Stobi, Episcopal Basilica (Saria 1933, 125)?

Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Saria 1933a, 125 fig. 57; Vulić 1941–1948, 30 f. no. 75; Nikolajević-Stojković 1957, fig. 36; Hoddinott 1963, pl. 38 c; Lilčić 2001–2002, 890 f.

43 Peacock Capital

Sample SK6: Sivec dolomite. H 66; diameter 53; abacus 83.

Condition: *à-jour* work partly broken off.

Description: One ring of eight fine-toothed double leaves interspersed with reeds and surmounted by four large peacocks in profile, one in the centre of



Cat. 40



Cat. 41



Cat. 42



Cat. 43



Cat. 44



Cat. 45

each side, interspersed with four smaller horned bull protomes looking out below the corners of the plain abacus. Remaining surfaces as well as the central protrusion of the abacus are covered by ivy leaves.

Date: Fifth century A.D.

Find spot: Stobi, Episcopal Basilica.

Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Egger 1929, 49 f. fig. 33; Nikolajević-Stojković 1957, 16; Lilčić 2001–2002, 190. 197. 823.

44 Peacock Capital

Sample Stobi 2 (2010): Sivec dolomite. H 73; diameter 50; abacus 73.

Condition: *à-jour* work partly broken off.

Description: Like cat. 43, but at the corners pine cones on long shafts instead of bull protomes.

Date: Fifth century A.D.

Find spot: Stobi, Episcopal Basilica.

Location: Belgrade, National Museum.

Literature: Egger 1929, 48 f. fig. 32; Goldman 1933, 298 fig. 4; Kitzinger 1946a, 68 cat. 74 fig. 104; Nikolajević-Stojković 1957, fig. 39; Hoddinott 1963, 166 pl. 38 e; Krumeich 1997, 293 f. pl. 50, 5; Daim et al. 2010, 246 f. cat. 235; Niewöhner – Prochaska 2011, 434. 437 fig. 1.

45 Ambo Platform Segment

Sample Stobi 1 (2010): Sivec dolomite. H ca. 30; L ca. 175; W ca. 75.

Condition: Upper part of the moulding partly broken.

Description: One third of the platform that probably consisted of three parts. The ends are mitred and rested on the stairs. The moulding is decorated with an undulating *à-jour* frieze of acanthus and an occasional quadruped flanked by two bead and reel strings and an egg and dart frieze below as well as a lotus frieze and a ledge above.

Date: Fifth century A.D.

Find spot: Stobi, Episcopal Basilica.

Location: Belgrade, National Museum.

Literature: Saria 1933a, 127 fig. 60; Goldman 1933, 298 fig. 5; Kitzinger 1946a, fig. 144; Nikolajević-Stojković 1957, fig. 171; Hoddinott 1963, 166 pl. 40 a; Niewöhner – Prochaska 2011, 434. 437 fig. 2.

46 Transenna

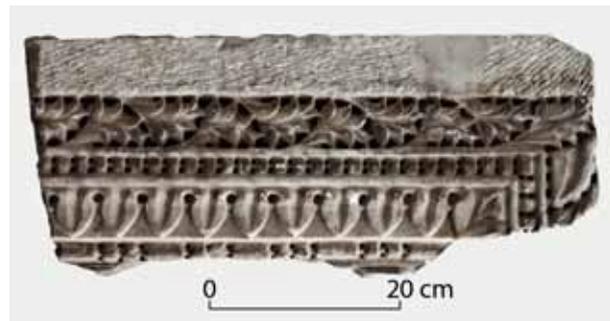
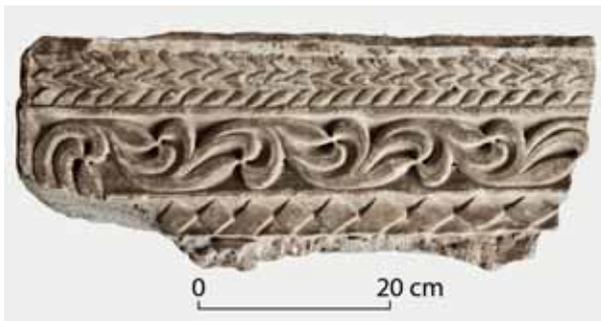
Sample ST15: Sivec dolomite. H preserved 35; L preserved 60; Th 13,5.

Condition: Two neighbouring sides are broken.

Description: Corner fragment of the frame of a transenna. Two outer frames occur only on the long side and are decorated with two undulating friezes, the one with alternating leaves, the other with alternating tendrils. Two inner



Cat. 46



Cat. 47

frames consist of a bead and reel string and a diamond band. Fragments of fine-toothed acanthus leaves belong to the open work within.

Date: Fifth century A.D.

Find spot: Stobi, theatre.

Origin: The Episcopal Basilica above the theatre?

Location: Stobi, depot.

47 Transenna

Fine-grained white dolomite. H preserved ca. 25; L preserved ca. 58.

Condition: Two neighbouring sides are broken.

Description: Corner fragment of the frame of a transenna. An outer frame occurs only on the long side and is imbricated on the front and serrated on the back. Inner frames consist of an undulating acanthus frieze and a diamond band on the front and a band of alternating fine-toothed acanthus leaves, an astragal, a lotus frieze, and a bead and reel string on the back.

Date: Fifth century A.D.

Find spot: Stobi, Episcopal Basilica.

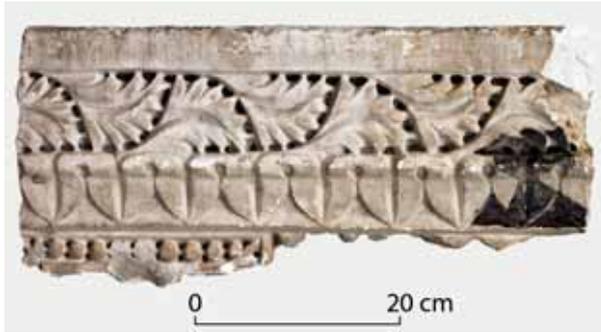
Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Egger 1929, 69 f. figs. 72. 73.

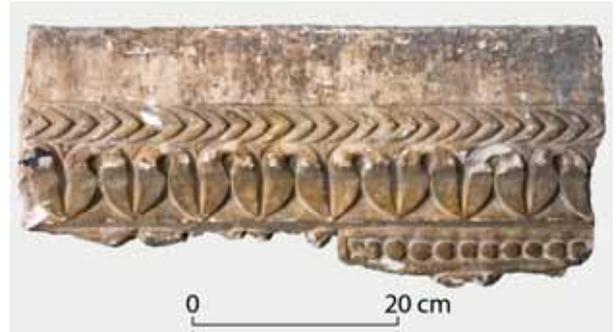
48 Transenna

Sample SK4: Pentelic calcite. H preserved ca. 24; L preserved ca. 53; Th 8.

Condition: Broken on three sides.



Cat. 48



Cat. 49



Cat. 50

Description: Frame of a transenna. An outer frame consists of a narrow ledge and a wide band of alternating fine-toothed acanthus leaves on the front and a wide ledge and a narrow imbrication on the back. Two inner frames are identical on front and back and consist of a lotus frieze and an astragal.

Date: Fifth century A.D.

Find spot: Stobi, Episcopal Basilica no. 50-VI.

Location: Museum of Macedonia – Skopje, Archaeological Museum.

Literature: Egger 1929, 68 f. fig. 67.

49 Handrail

Sample SK3: Sivec dolomite. H 15; L preserved ca. 51; W of pad 7, upper W 25.

Condition: Both ends are broken.

Front: Undulating *à-jour* frieze of tendrilled vine with grapes and leaves as well as a quadruped with a tasselled tail turned in and up between the hind legs. Back: undulating acanthus frieze, pasty, no articulation of the relief (half finished?). Bottom: picked groove for the insertion of a slab.

Date: Fifth century A.D.



Cat. 51 a

Find spot: Stobi, Episcopal Basilica no. 52-VI.
 Location: Museum of Macedonia – Skopje, Archaeological Museum.
 Literature: Egger 1929, 69 figs. 70. 71.

50 Handrail

Fine-grained white marble. H ca. 12; L preserved ca. 50.
 Condition: One end is broken.
 Description: Front: undulating *à-jour* frieze of alternatively standing and hanging acanthus palmettes. Bottom: picked groove for the insertion of a slab.
 Date: Fifth century A.D.
 Find spot: Stobi, Episcopal Basilica.
 Location: Museum of Macedonia – Skopje, Archaeological Museum.
 Literature: Egger 1929, 47. 68 fig. 28, 10.

51 Templon Post

Sample SK19: Sivec dolomite. H 197: post 95, column base 20, column shaft 59; column capital 23; W of post = abacus 23.
 Description: Post with a soffit on the front and a groove for the insertion of a slab on the left side, a high column base, a colonnette and a capital with four acanthus leaves at the corners.
 Date: Fifth century A.D.
 Find spot: Suvodol.
 Location: Museum of Macedonia – Skopje, Archaeological Museum.
 Literature: Mesesnel 1932, 206–210 figs. 3–11; RBK V (1995) 1067 f. s. v. Makedonien (B. Schellewald – L. Theis); Lilčić 2001–2002, 777–779.

52 Basket Capital

Sample SK15: Sivec dolomite. H 30; diameter 26; abacus 30.
 Condition: Breakage at the base, probably caused by the dowel.
 Description: Tall basket with several watted rings around the base and the top. Four bunches of various fruits and leaves are hanging down from the corners of the stepped abacus. Four other such motives protrude from the abacus in the middle of each side.
 Date: Sixth century A.D.
 Find spot: Stobi, Basilica Extra Muros.
 Location: Museum of Macedonia – Skopje, Archaeological Museum.
 Literature: Filipova 1998, 173 pl. 19, 1 a. b; Lilčić 2001–2002, 866–869.



Cat. 51 b



Cat. 52

Abstract

Philipp Niewöhner – Lucy Audley-Miller – Walter Prochaska, *Marbles, Quarries and Workshops on the Highlands of Northern Macedonia*

Keywords

archaeometry • FYROM • Late Antiquity • Sivec dolomite • Stobi

Throughout antiquity the landlocked highlands of northern Macedonia employed various local and imported marbles. Among them a certain fine-grained white dolomite stands out both in number of artefacts and in quality of workmanship. The material was used for Roman sculptures as well as the best carvings from Late Antiquity and can be traced back to an ancient quarry at Sivec near Prilep. Local workshops must have been based there or at nearby cities. This contrasts with the southern lowlands south of the Demir Kapija Gorge, where Thasian marble appears the default white marble preference and could be imported with relative ease via the Axios/Vardar River. In Late Antiquity, Sivec marble started to be carved in a style and quality that is without precedent in the region, but often indistinguishable from the production of the quarries and workshops at Proconnesus/Constantinople and Docimium in Anatolia. The three Late Antique quarries seem to have been interconnected in a way that is reminiscent of and possibly in part based on the Roman quarry system.

Sources of illustrations

Figs. 1–22: Authors • Cat. 1–40. 42. 43. 46. 47–51 a. 52: Authors • Cat. 41. 44: The Institute of Archaeology, Belgrade • Cat. 45: Goldman 1933, fig. 5 • Cat. 51 b: Mesesnel 1932, fig. 5

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