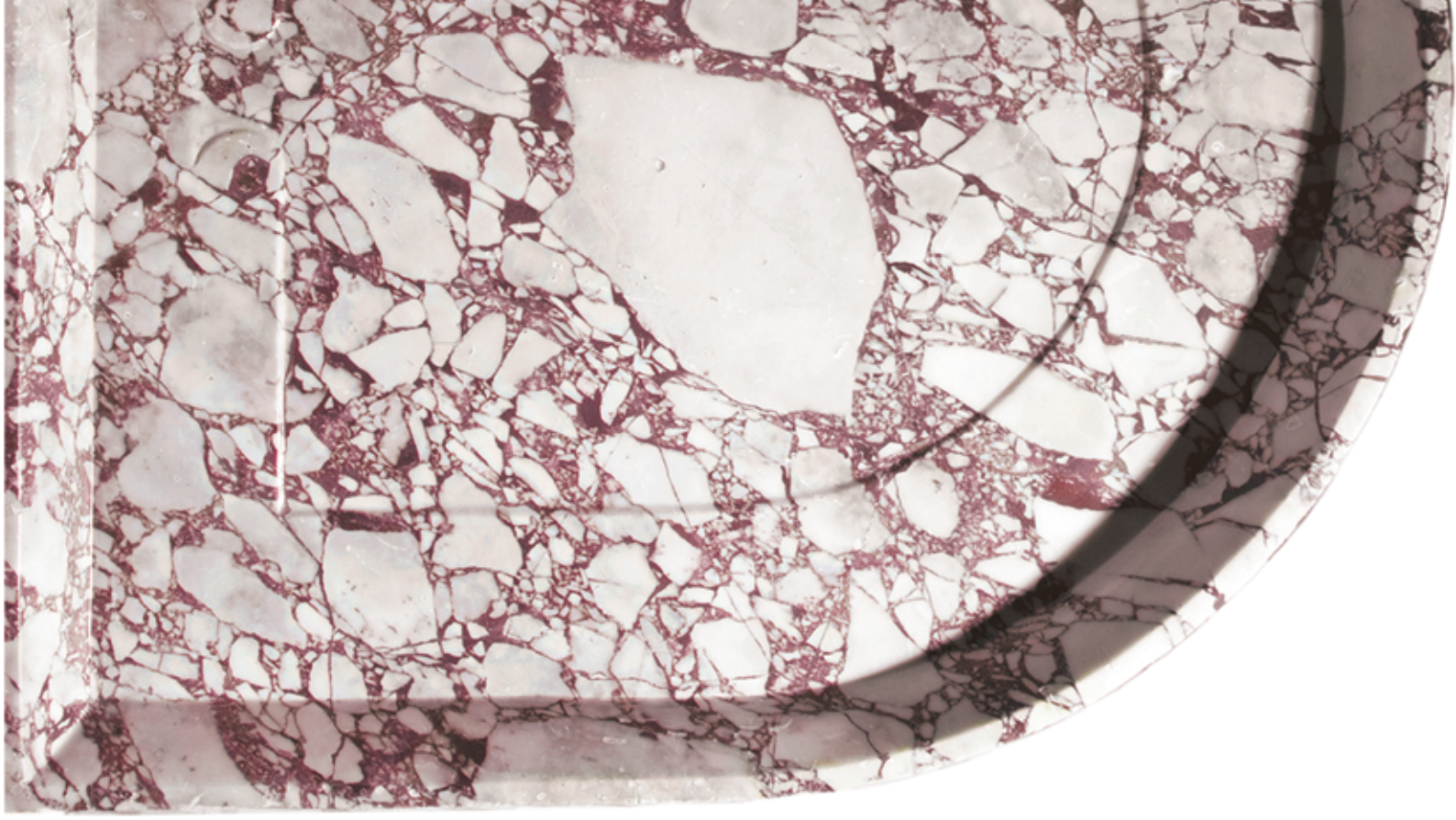
Recycling of Marble: Apollonia/Sozousa/Arsuf (Israel) as a Case Study

Fischer, Moshe; Tambakopoulos, Dimitris; Maniatis, Yannis



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CONTENT

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RECYCLING OF MARBLE: APOLLONIA/SOZOUSA/ARSUF (ISRAEL) AS A CASE STUDY

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Abstract

The focus of this paper is the latest reuse of marble items (spolia) at the site of Apollonia/Sozousa/Arsuf (Israel) during the Crusader period (12th -13th centuries CE). In spite of the intensive excavations carried out in the last decades at the site and the richness of information regarding the Roman and Byzantine periods only a few marble items originating in these periods have been found in situ. However, a great part of the items unearthed or surveyed at Apollonia could have been related typologically to these periods. Most of them were found in or close to the massive remains of the Crusader period, and in this case, mainly as spolia, partly in their original shape but mostly refurbished for use other than that first intended.

Keywords
use, spolia, reuse/recycling, provenance, marble, stable isotopes, EPR, grain size

Introduction

The site of Apollonia/Sozousa/Arsuf (Israel) is located ca. 15 km north of Tel Aviv-Jaffa (Fig. 1) overlooking the Mediterranean coast (Fig. 2). It is Persian-Hellenistic in origin, known as the Phoenician city of Rishpon, becoming later the Hellenized Apollonia, one more of the tens of cities bearing the name of the god of Greek colonization (SHACHAR 2000). That Greeks or Hellenized Phoenicians were living at the site as early as the Persian period is well supported by Greek pottery (ROLL and TAL 1999) and even by a well preserved Attic *Totenmahl-relief* made of Pentelic marble (FISCHER, TAL 2003). The city developed under Roman and Byzantine rule yet only a few remains have been preserved and that in spite of the intensive excavations carried out at the site over the last decades (for a summary see http://archaeology.tau.ac.il/?page_id=4668). The most outstanding buildings are a Roman maritime villa (ROLL, TAL 2008) and a richly decorated church (BIRNBAUM *et al.* 1990). Due to the massive reuse of the site through the late antique and medieval periods the main antique structures have been rebuilt and their items refurbished in later times. During the Early Islamic period (8th-11th century CE) Apollonia, now known as Arsuf, was a strong harbor that incorporated one of the famous outposts along the coast at which the ransoming of prisoners was mainly carried out. In 1101 CE the city was taken by the Crusaders, renamed Arsuf (also Arsur), becoming famous after the victory of Richard the Lion-Heart over Saladin at the Battle of Arsur in 1191. Becoming a leading fortified city and fortress owned by the House of Ibelin and after 1261 by the Hospitallers, it entered the history of the region through its siege and conquest by the Mameluke sultan Baybars in 1265. The latter razed the city to its foundations, an event from which it never recovered. The relatively long rule of the Crusaders and their intensive building and fortifying policy are the answer to the question of the rather sparse architectural and decorative items of the previous periods. Ninety per cent of this material originates in such recycled structures. The re-and misuse of marble items at Apollonia has a long history culminating in some belligerent events from WWI. Then, a British unit lifted some marble columns from the site in order to mark the spots where the Scottish regiment crossed the River Yarqon; they are still there (MASSEY 1919, 235-36).

Thus the site of Apollonia is a challenging spot for the examination of spolia, and in this case mainly of marble items. Without going here into details regarding the use of spolia and their meaning (SARADI 1997) we focus on the spolia used by the Crusaders for very practical reasons: for fortifications, weapons and architecture, a quite common trend of this culture (GREENHALGH 2008).

As has been pointed out in the past, in Ancient Israel marble decorated mainly Caesarea Maritima (the capital of the province *Palaestina*) and Ascalon both located at the Mediterranean coast (FISCHER 1998), but also Scythopolis (Beth Shean) in the Jordan Valley (MAZOR, ATRASH 2015). Other sites also devoted a part of their efforts in the use of marble for special projects. One of these sites was Apollonia/Sozousa/Arsuf, where the main use of marble can be dated to the Byzantine period and a massive re-used and also misuse have been attributed to the Crusader period. A provenance analysis

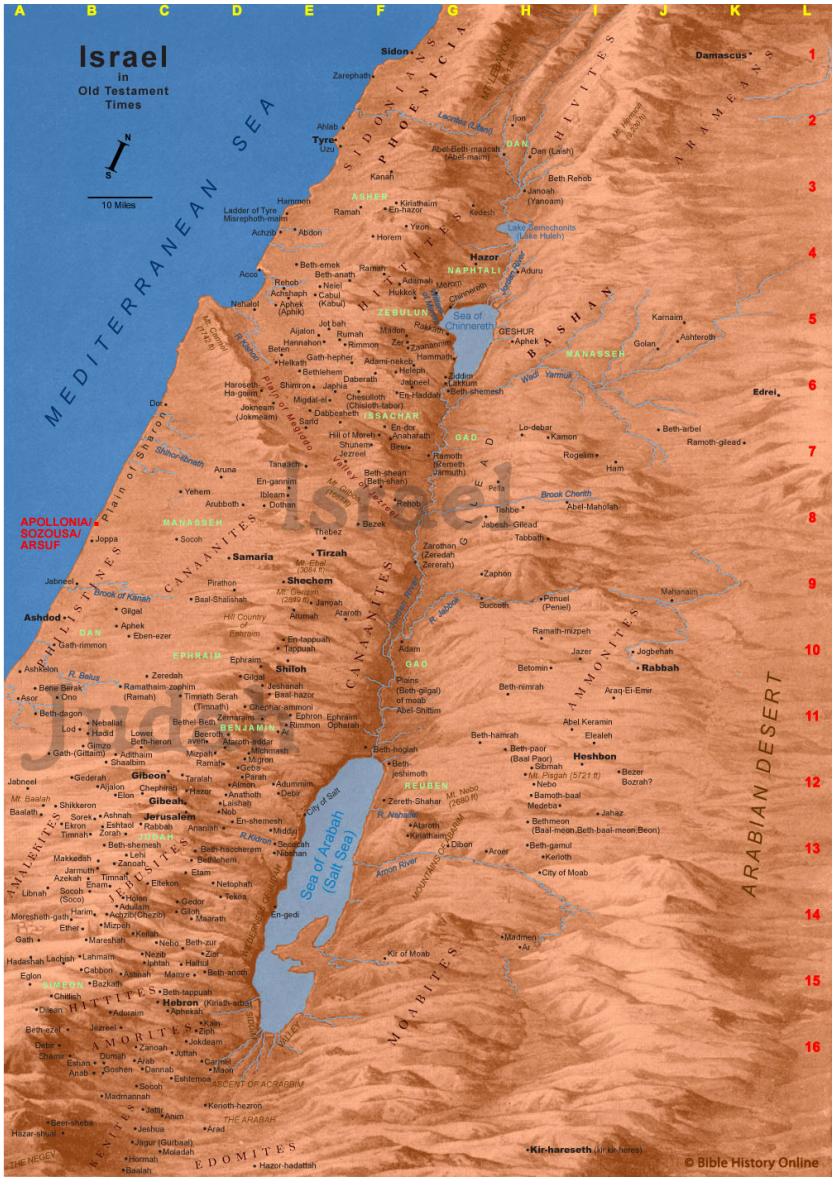

Fig. 1.
Location of Apollonia

Fig. 2.
Aerial view of Apollonia

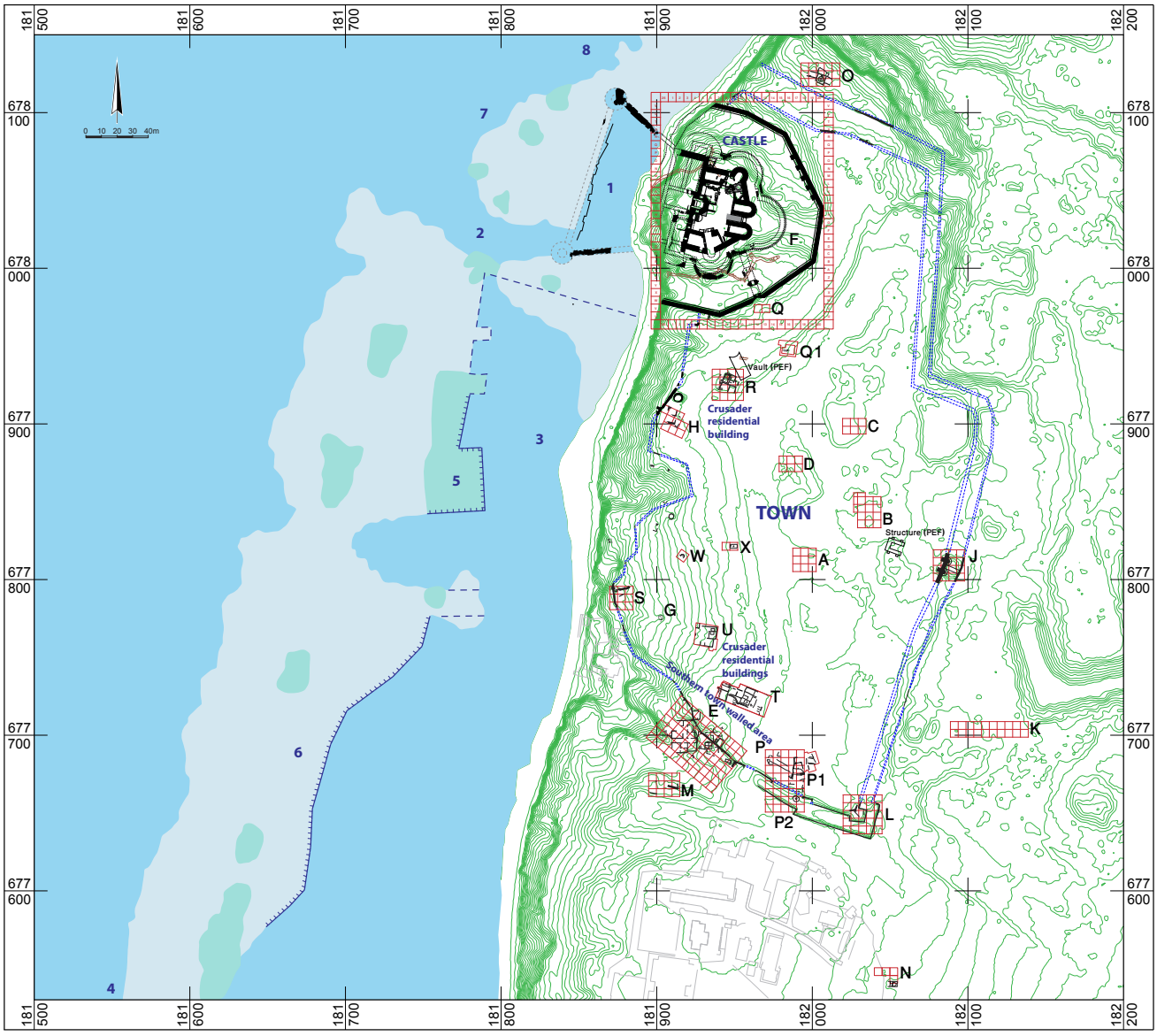

Fig. 3. Plan of the site

with scientific techniques has been carried out for some of these items, which is the subject of this paper.

The items under examination

For this project 21 items from Apollonia have been chosen, out of 500 items, to be tested for marble provenance examination. Table 1 provides a list of the items with descriptions and photos. They represent column bases, shafts and capitals, most of them with clear signs of reuse in periods later than those of their original use. Following their typological characteristics the items belong to a rather large chronological span beginning with the Roman Imperial period (2nd century CE) and ending with the Crusader rule in the region (12th century CE).

The items were found in Crusader structures (Fig. 3), cut and refurbished for fortifications (Figs. 4-5) and weapons. Thus, mainly fragments of columns (**Items 1, 2, 7,** Table 1) were found in one of the central rooms of the fortress in a kind of workshop for cutting columns for catapult stones, which remained in situ (Figs. 6-7). Among these items a fragmentary statuette of a head with curled hair was found (**Item 21**), a relic of a Byzantine period (SMITH 1999, 168, Pl. X: 3-4). This destructive reuse of columns and statuary for catapult missiles is worth mentioning. Their production was due to the exigencies of the time of the Mameluke siege, the Crusader defense and finally the conquest of the city, between April 26 and 29, 1265 (AMITAI 2005). Of these catapult stones, 2748 have been retrieved and recorded in the site, from all over the fortress.

The issue of reuse of marble items (as well as the local kurkar items) for two main purposes is relevant for the history of Apollonia as well as that of the reuse of marble in the region. One of the kinds of reuse is related

Item 1. Column prepared for cutting for catapult missile (Byzantine 6th c. CE). Marble: Greyish, transparent

Item 2. Fragment of column prepared for catapult missile. Marble: Whitish

Item 3. Byzantine capital cut in half (6th c. CE). Marble: White, high transparency.

Item 4. Byzantine capital without volutes and helices (6th c. CE). Marble: Whitish

Item 5. Byzantine medallion capital (6th c. CE). Marble: Whitish, transparent

Item 6. Ionic-Attic base (Roman 3rd c. CE). Marble: Whitish, transparent

Item 7. Colum (Roman 3rd c. CE). Marble: Whitish, weathered, fine grey parallel striations

Item 8. Medallion capital with cross (Byzantine 6th c. CE). Marble: White, greyish, grains broken and angular

Item 9. Byzantine cyma capital (6th c. CE). Marble: White, high transparency

Item 10. Ionic-Attic base (Late Roman, 4th c.CE). Marble: Whitish, transparent

Item 11. Ionic-Attic base (Late Roman 4th c.CE). Marble: Greyish, well crystallized

Item 12. Ionic-Attic base recut as jamb (Late Roman. 4th c.CE). Marble: Whitish, transparent, well crystallized

Item 13. Ionic-Attic base (Late Roman. 4th c.CE). Marble: Greyish, transparent, well crystallized

Item 14. Column (Roman or Byzantine). Cut for door/window jambs/thresholds (Roman). Marble: Whitish, well crystallized

Item 15. Column (Roman or Byzantine) with signs of cutting and sawing. Marble: Grey, well crystallized, grains broken and angular

Item 16a-b-c. Ionic-Attic base (Roman 3rd c. CE) transformed into a door frame. Marble: Whitish, well crystallized, transparent

Item 17a-b. Fragment of a mutilated statue (Roman 2nd c. CE). Marble: White, fine grained, schistolithic veins

Item 18. Fragment of figured Capital (Roman 3rd c. CE). Marble: White, well crystallized

Item 19. Handle of bowl (Byzantine 6th c. CE) Marble: Light grey

Item 20. Revetment (Byzantine 6th c. CE). Marble: White, well crystallized

Item 21. Head with curly hair of a statuette (Byantine 6th c. CE) recycled as catapult missile. Mabrle: Grey, heteroblastic, one side with ~0.5 mm grains and one with 2-2.4 mm

Table 1. List of items examined with archaeological and marble descriptions and photos

Fig. 4. Reused column as a threshold of the Crusader fortress gate

Fig. 6. View of the catapult missile workshop

Fig. 5. Reused column as wall stabilization of the Crusader fortress

Fig. 7. View of the catapult missiles in one of the towers of the Crusader fortress

to the building program typical of the few years of the Hospitallers' rule at the site (1261-1265 CE). Every worked item had to be recycled. Thus, our **Item 16** is a wonderful example of reuse, a massive Ionic-Attic base for a door or window jamb, presumably for a main building of this last stage of the site, such as a chapel or church.

A number of columns which were in the process of being cut, sawn and refurbished have also chosen for examination (**Items 1, 2, 7, 14 and 15**). They belong to a larger span of Roman and Byzantine period since it is rather difficult to determine their exact dating.

On the other hand, the Corinthian capitals (**Items 3, 4, 5, 8 and 9**) are perhaps more relevant due to the possibility of their typological and chronological identification. They are of late Roman and Byzantine design. All of them indicate workshops of the Constantinopolitan area, which is supported also by their Proconnesian marble provenience, as shown by the analysis results (Table 3).

Item 3 is of the type of Late Roman Corinthian capital including a part of the repertoire of the Roman "classic" capital, namely two row of acanthus leaves, volutes and helices, a well-defined abacus without, however, any caules or calyx. In his book, KAUTZSCH (1936, 98-111) presents four types of Late Roman capitals recorded by him in Jerusalem, which have one crucial common trend, namely the full repertoire of the Roman capital but only **Type IV** (1936, 108-111, Nos. 317-337) has both volutes and helices and yet lacks caules and calyx, as in our case. Their acanthus is fleshy yet with sharply cut tips, somewhat curled upwards (Kautzsch's '*aufgekrümmte' Innenzacken*). A group of such marble capitals occurs in the Temple Mount of Jerusalem (WILKINSON 1987, Nos. 104-108). They are marked with letters/numbers such as IZ (=Greek 17) (104), KA (=21) (105), KB (=22) (106), KE (=25) and were dated by Wilkinson according to Kautzsch to the **5.-6.c.CE.** Further investigations carried out in Constantinople would point to the first third of the 5th century CE (ZOLLT 1994: 46-47).

Fig. 8.
Crusader capital of door jamb made of a Roman marble column

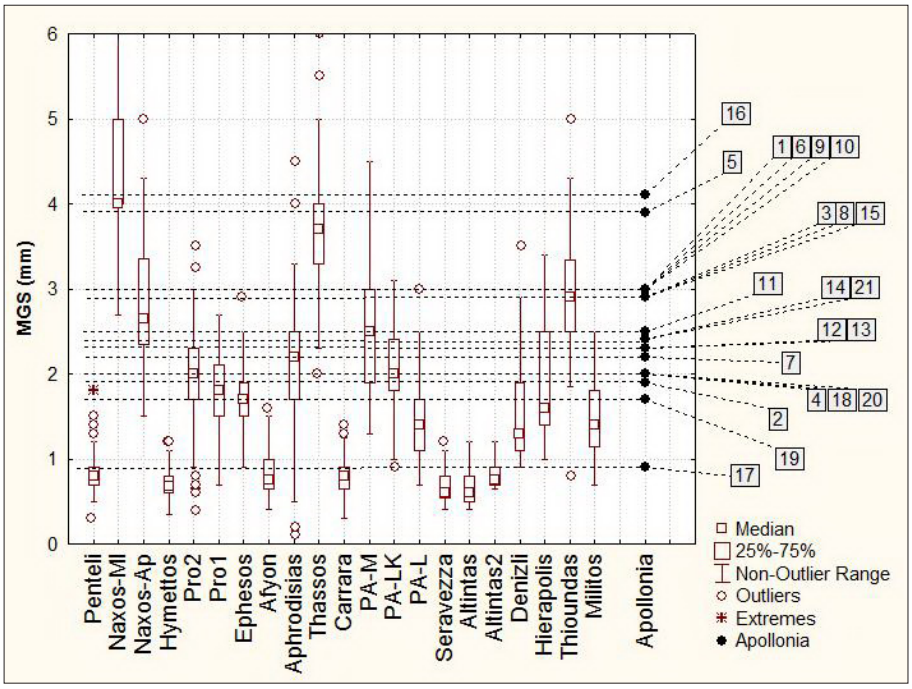

Fig. 9.
The MGS for the samples measure against the database of MGS for known ancient quarries. Data from own laboratory and ATTANASIO 2006.

Item 4 represents capitals with one row of acanthus leaves and highly grown corner leaves and thin volutes. A central leaf is below the abacus flower. According to ZOLLT (1994, 176, No. 490, Pl. 41) and based on parallels this type can **be dated to the 6th century CE.**

Item 9 is a Corinthian capital with two rows of acanthus leaves and schematic thin volutes only, yet together with two rhomboid additions marking the place of the helices. A schematic cymatium decorates the upper part of the calathus, beneath the abacus, reminding us of features of the Composite style. The decoration of the calathus by a cymatium is rather uncommon. According to ZOLLT's examples though with plain calathus (1994, 145; 158, Nr. 391 and 429) it can be **dated to the second half of the 5th century CE.**

Items 5 and 8 are capitals with one row of acanthus leaves, and a bulk emerging from the calathus recalling the shape of an oval medallion which is limited by pseudo-calyces. They represent a rather popular type of the **mid-5th to mid-6th century CE** (ZOLLT 1994, Nr. 344, 365, Fig. 11; Pl. 39); One of them (8) has a cross in the medallion, also rather popular through this period, seen for example in a group of capitals from Side (GUIDOBALDI *et al.* 1992: [239-247] Fig. 390; also BARSANTI 1989, 135-138, Figs. 52-58).

Judging from their style these capitals could have been part of the decoration of some monumental structures from the Byzantine period, such as the church mentioned above. Their style is rather eclectic, suggesting a variety of building projects, but this does not mean that they could not have been used in the same building complex, which was a common feature in provincial Byzantine architecture.

Further architectural items could also have been part of such Byzantine structures, but could have been already reused at that time as Roman spolia. This is the case with **Items 6, 10, 11, 13 and 16,** Ionic-Attic bases of Roman design (SHOE MERITT 1969, 188) which can be dated to the Late Roman and Byzantine period (FISCHER 1998, 81-86). The main characteristic of these bases is

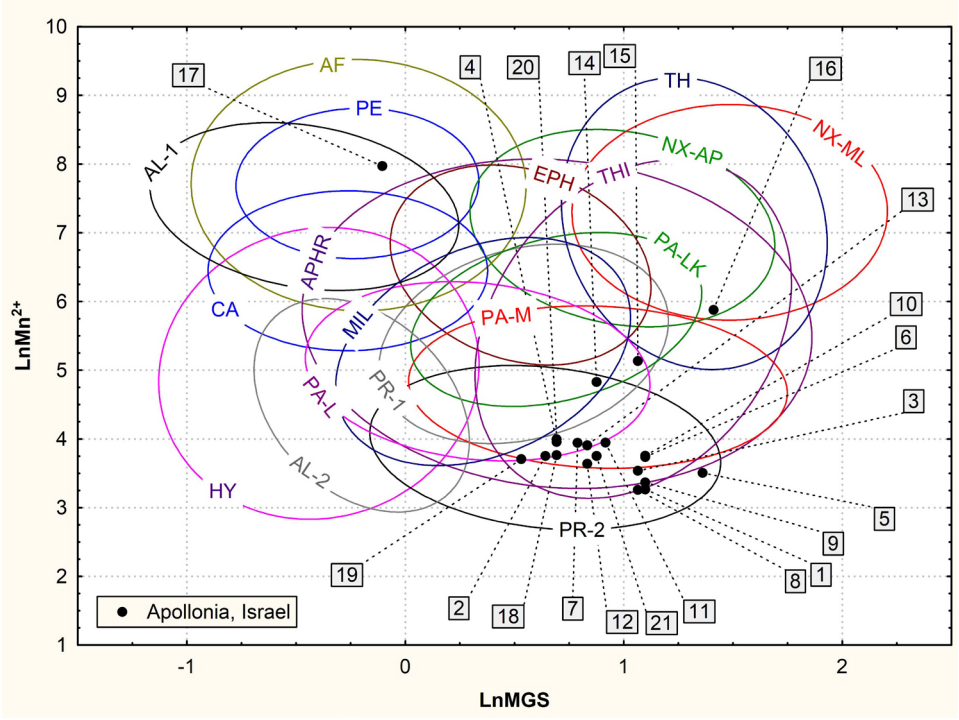

Fig. 10. The natural logarithm of the Mn2+ intensity measured form the EPR spectrum (LnMn2+) versus the natural logarithm of the MGS (LnMGS) of the archaeological samples plotted against all known ancient marble quarries. The ellipses represent the distribution of the equivalent geological sample parameters: Afyon (Dokimeion) (AF), Altintas (AL-1 and AL-2), Penteli (PE), Naxos-Apollon and Naxos-Mellanes (NX-AP, NX-ML), Ephessos (EPH), Aphrodisias (APHR), Paros-Lychnites (PA-L), Paros-Marathi (PA-M, Paros-Lakoi (PA-LK), Proconnessos (PR-1 and PR-2), Thassos-calcitic (TH), Hymettos (HY), Carrara (CA), Miletos (MIL) and Thiountas (THI). The database is that of the Laboratory of Archaeometry, NCSR "Demokritos" (MANIATIS et al. 1988; MANDI 1993; POLIKRETI 1999; MANIATIS, POLIKRETI 2000; POLIKRETI, MANIATIS 2002; TAMBAKOPOULOS 2007) except from the Carrara, Miletos and Thiountas data which are taken from ATTANASIO (2006).

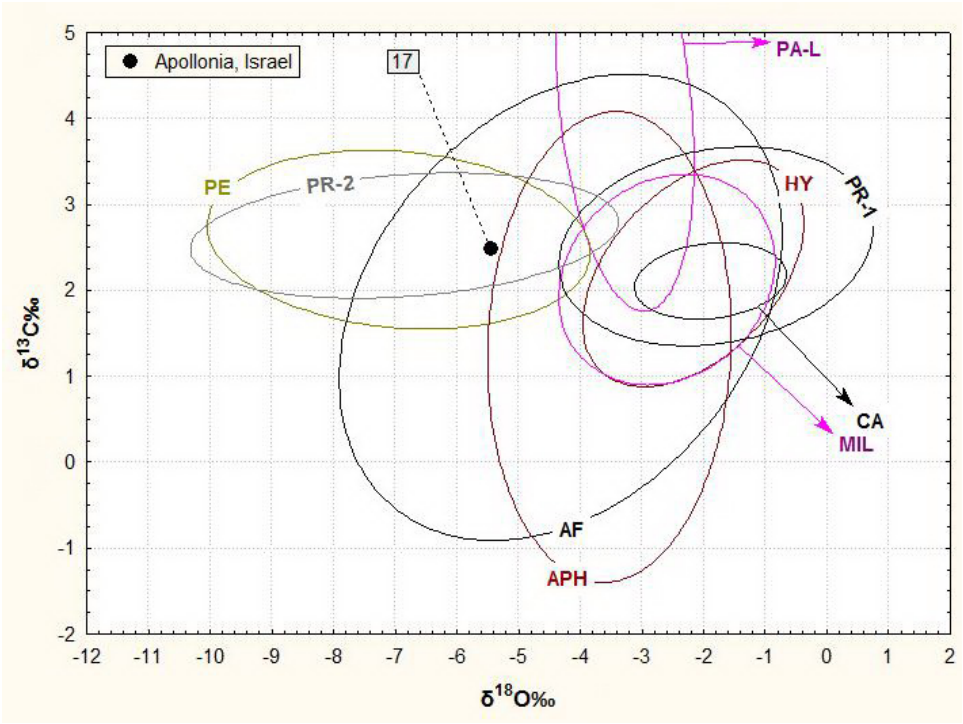

Fig. 11. The isotopic signature of the fine-grained sample no. 17 against the isotopic fields (ellipses) of known quarries with relatively fine-grained marble. Data for the isotopic fields from HERZ 1985, 1987 and 1987; ATTANASIO 2006 and our own laboratory.

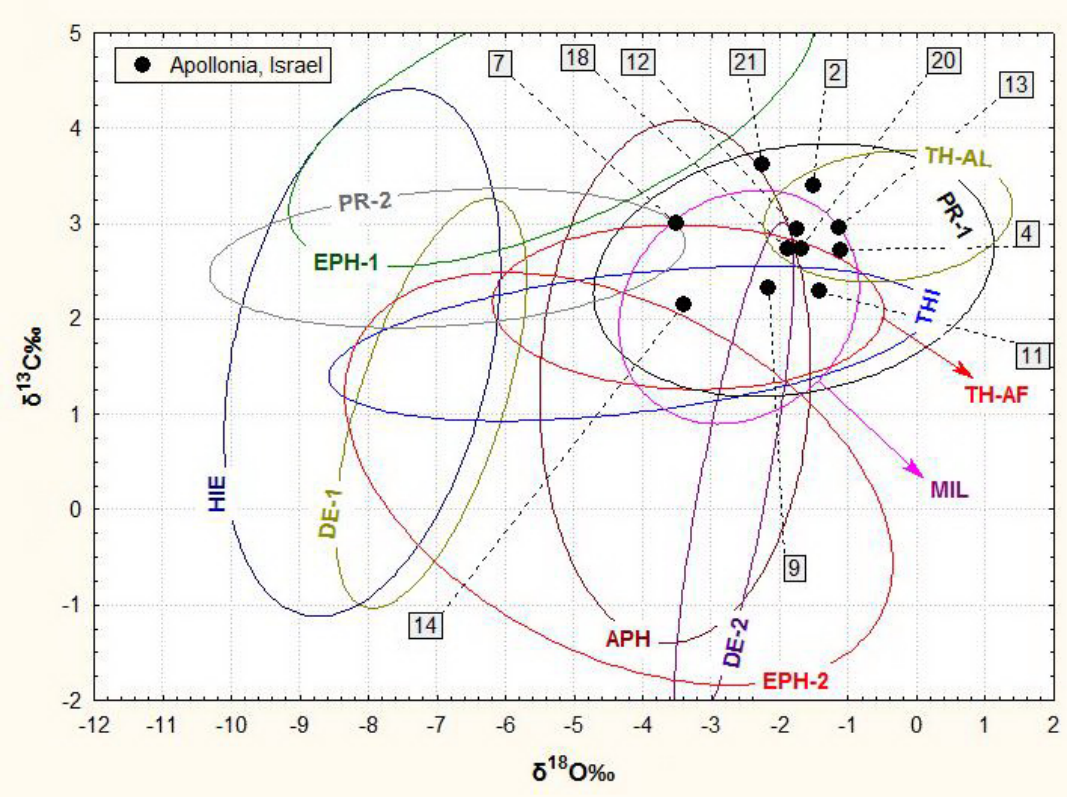

Fig. 12. The isotopic signature of the medium-grained marble samples against the isotopic fields (ellipses) of known quarries with medium-grained marble. Additional quarry fields in this diagram are: Denisli (DE-1 and 2) and Thasos-Akropolis&Fanari (TH-AF). Data for the isotopic fields from HERZ 1985, 1987 and 1987; ATTANASIO 2006 and our own laboratory.

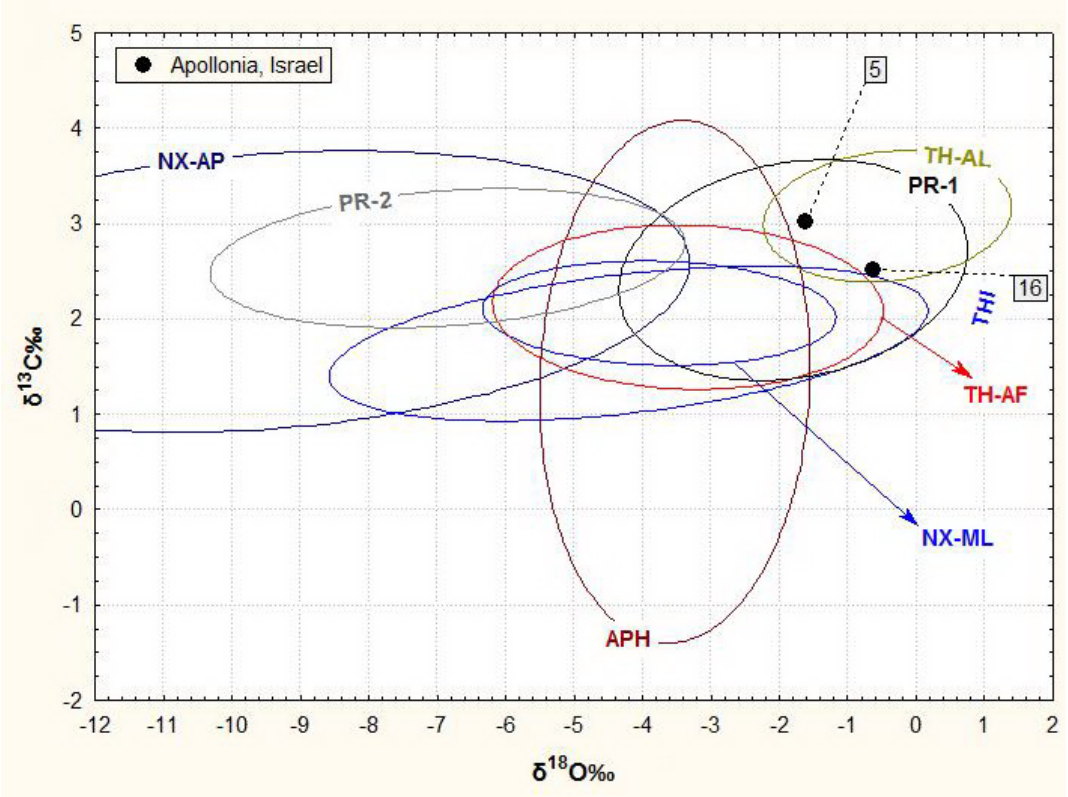

Fig. 13. The isotopic signature of the coarse-grained marble samples against the isotopic fields (ellipses) of known quarries with coarse-grained marble. Data for the isotopic fields from HERZ 1985, 1987 and 1987; ATTANASIO 2006 and our own laboratory.

Sample no	MGS (mm)	MFS (mm)	Dol (%)	Mn^{2+} (r.u.)	Width (Gauss)	Fe^{3+} (r.u.)	$\delta^{13}C$ (‰)	$\delta^{18}O$ (‰)
1	3.0	1.5-2.0	-	26.22	2.20	13.02	-1.30	1.89
2	1.9	1.5	0.26	42.61	2.53	3.13	-1.51	3.41
3	2.9	2.0	-	34.31	2.00	0.00	-1.79	2.60
4	2.0	1.5	-	52.32	1.95	0.00	-1.11	2.72
5	3.9	2.0-3.0	-	33.29	2.82	0.00	-1.61	3.03
6	3.0	1.0-2.5	-	42.02	1.88	9.66	-1.03	2.95
7	2.2	1.0	-	51.66	2.51	5.79	-3.49	2.98
8	2.9	2.0	-	26.00	3.24	6.36	-1.78	2.50
9	3.0	2.0	-	29.03	1.64	0.00	-2.16	2.33
10	3.0	2.0	0.20	42.80	2.67	7.32	-2.30	2.81
11	2.5	1.0-2.0	0.18	51.86	2.88	5.79	-1.41	2.29
12	2.3	1.0-1.5	tr	38.02	2.50	5.27	-1.75	2.94
13	2.3	1.0-1.5	0.25	49.79	2.25	8.00	-1.14	2.96
14	2.4	1.0-1.5	tr	125.35	1.73	14.77	-3.40	2.15
15	2.9	1.0-2.0	-	169.75	2.53	6.53	-2.56	2.14
16	4.1	1.0-2.5	-	357.02	2.43	8.77	-0.58	2.50
17	0.9	0.5	-	2897.97	2.79	11.50	-5.44	2.48
18	2.0	1.0-2.0	-	43.15	1.63	17.53	-1.87	2.73
19	1.7	1.0	0.19	40.68	2.21	6.17	-2.26	2.31
20	2.0	1.0-2.0	-	54.35	1.79	0.00	-1.69	2.73
21	2.4	0.5-2.0	0.34	42.71	4.36	0.00	-2.25	3.62

Note: MGS = Maximum Grain Size, MFS=Most Frequent Grain Size, tr = traces, (r.u.) = relative units.

Table 2. The values of the measured parameters for all the samples

their massive recycling and later reuse, presumably by the Crusaders. Item 16 shows the whole process from a regular Ionic-Attic base to the creation of the door or window jamb. Since these items have been found in the debris of the Crusader fortress it seems that they were prepared for the latter, in one of the most elegant of the buildings, perhaps a chapel, which is still missing in the field. Some decorative remains of such a building have been retrieved; most of them were made of local sandstone (kurkar) but some of them of reused marble. An outstanding well elaborated doorjamb capital with figured decoration was refurbished from an ancient marble column of Proconnesian origin (fig. 8) (TAL ed. 2011, [29-31], Fig. 17).[1]

Item 17 is probably the most elaborated sculptural fragment of the site. It represents a life-size thigh of a male seated statue and the remains of the drapery covering the piece. It reminds us of the style and design of the seated type of Ares Ludovisi or Apollo Kitharoidus (best examples in Palazzo Altemps) as reflected by many Roman Imperial copies (RIDGWAY 1990, 84, Pls. 48-51), such as the

1 This item (Reg. Nr.AP2010-0054) altogether with further architectural and decorative remains from the Crusader period have been studied by Vardit Schotten-Hallel as part of her PhD Dissertation submitted to the Hebrew University in Jerusalem and will form part of a Research Project investigating the Crusader chapel at Apollonia, supported by the Israeli Science Foundation and headed by Oren Tal on behalf of the Institute of Archaeology, Tel Aviv University. Our thanks are due to Vardit Schotten-Hallel for her information regarding these items and to Oren Tal for his permanent support of the Research of Marble at Apollonia, carried out by Moshe Fischer during the past years.

Sample no	Type of object	Date	Provenance 1st choice	Provenance 2nd choice
1	Column prepared for cutting for catapult missile	Byzantine 6th c. CE	**Proconnesos**	-
2	Fragment of column prepared for catapult missile	Roman or Byzantine	**Proconnesos**	-
3	Byzantine capital cut in half	6th c. CE	**Proconnesos**	-
4	Byzantine capital without volutes and helices	6th c. CE	**Proconnesos**	-
5	Byzantine medallion capital recut	6th c. CE	**Proconnesos**	-
6	Ionic-Attic base cut to a quarter of it	Roman Imperial 3rd c. CE	**Proconnesos**	-
7	Column cut and reused as threshold	Roman Imperial 3rd c. CE	**Proconnesos**	-
8	Medallion capital with cross	Byzantine 6th c. CE	**Proconnesos**	-
9	Byzantine cyma capital	Byzantine 6th c. CE	**Proconnesos**	-
10	Ionic-Attic base with mason mark	Roman Imperial 3rd c. CE CE	**Proconnesos**	-
11	Ionic-Attic base cut into a half	Late Roman 4th c. CE	**Proconnesos**	-
12	Ionic-Attic base transformed in door/ window frame	Late Roman 4th c. CE	**Proconnesos**	-
13	Ionic-Attic base with side cuttings	Roman Imperial 3rd c. CE	**Proconnesos**	-
14	Column prepared for doorjamb/threshold	Roman or Byzantine	**Procennesos**	Paros, Aphrodisias, Thiountas, Miletos
15	Column with signs of preparation for cutting	Roman or Byzantine	**Procennesos**	Miletos, Paros
16	Ionic-Attic base transformed in door/ window frame	Roman Imperial 3rd c. CE	**Thassos-Aliki**	Paros-Lakkoi?
17	Fragment of a mutilated statue	2nd – 3rd c. CE	**Penteli**	-
18	Fragment of Corinthian figured capital	Roman 3rd c. CE	**Proconnesos**	-
19	Handle of bowl	Byzantine 6th c. CE	**Proconnesos**	-
20	Revetment	Byzantine 6th c. CE	**Proconnesos**	Miletos
21	Curled head of statuette; possibly recycled as catapult missile	Byzantine 6th c. CE	**Proconnesos**	-

Table 3. Provenance assignment for the objects analyzed

Belvedere Torso (BOL 2007: Figs. 314-315).[2] It has also been found in the area of the fortress but as a surface find, which, unfortunately does not give any indication concerning the precise structure to which it would have belonged. It seems to be of Roman second century CE workmanship though 2nd century BCE work would not be excluded. Its marble, identified as Pentelic would also support such a dating.

Finally, another interesting piece is **Item 21**, a fragment of a statuette of a curly haired man retrieved in the area of the workshop of the catapult stones. Together with many fragments of columns they were partly refurbished as catapult stones, partly left on the spot with remains of attempts at sawing and cutting them. It has been previously published (FISCHER 2009: 408, Fig. 7). Its marble has been identified as Aphrodisian. Due to its special character and reuse it was worth reexamination, which was done for this conference. The results led to a revised identification of its origin, now identified as in Proconnesos. Only parts of the hairstyle and forehead have been preserved. The hair is very decoratively designed; reminding us of metal work with individual locks forming a highly intricate pattern of loops and S-curls with tiny drill-holes accentuating the 'eyes'. Although it strongly recalls the early classic style of the Olympia workshop it also represents the artistic trend of the revival of the latter in the sixth century CE, mainly the Justinianic period (INAN, ALFÖLDI-ROSENBAUM 1979, pp. 159-160, no. 112, pl. 269; pp. 201-202, no. 172, pl. 270,3; *cf*. 'togatus' from Ephesus, INAN, ALFÖLDI-ROSENBAUM 1966, pp. 157-158, no. 202); a rather similar type has been retrieved in Aphrodisias where it has been dated to that period (SMITH 1999: 168, pl. X:3-4).

Samples and experimental techniques

Small chips were obtained from each object and subject to laboratory examination and analysis. The techniques used are (MANIATIS 2004):

1. *Examination of the chips under a stereoscopic optical microscope, qualitative examination of the marble crystalline features and measuring the maximum grain size (MGS) and most frequent grain size (MFS).*
2. *Electron paramagnetic resonance spectroscopy (EPR).*
3. *Stable isotope analysis (IRMS) for carbon and oxygen.*

Following the examination under the microscope the samples were cleaned of dirt and weathering crusts mechanically and chemically with weak acid and ground gently in an agate mortar. The obtained samples were analyzed first by EPR spectroscopy and the parameters Mn^{2+}, and Fe^{3+}, expressed in relative units (r.u.), and *width* expressed in Gauss, were measured as described in POLIKRETI, MANIATIS 2002 and MANIATIS, POLIKRETI 2000. In addition, aliquots of the prepared samples consisting of very fine grain fractions (<63 μm) were submitted for isotope analysis to a mass spectrometer (IRMS) and the δ values for the carbon ($\delta^{13}C‰$) and oxygen ($\delta^{18}O‰$) isotope ratios were measured (HERZ 1985, 1987, 1988). All spectroscopic and isotopic parameters are summarized in Table 2.

Interpretation of the results

Figure 9 shows the MGS in mm of all the Apollonia samples against the database for MGS of known ancient quarries. Based on this we can see that we have three groups of samples which can be classed as: fine-grained (item 17), coarse-grained (items 5, 16) and medium-grained (all the rest). From this diagram certain quarries can at once be excluded as origin for each group of samples.

In the second approach the logarithm of the intensity of Mn^{2+}, as measured with EPR spectroscopy, is plotted against the logarithm of the MGS and statistically compared with the same parameters of all ancient known quarries (Fig. 10). From this diagram it can be seen that most of the samples, with just a few exceptions, fall inside the Proconnesos-1 and 2 quarry fields, but some of them in regions where there is some overlap with other quarries as well. Only item 17 falls far away from the Proconnesos fields, due to its fine-grained nature and high Mn^{2+} content, and item 16 due to its coarse grain size and higher Mn^{2+} content.

Following the above first steps of analysis and in order to clarify and distinguish the origin of the samples falling to overlapping quarry regions, we ran a statistical analysis of the isotopic signature of the samples in question against the isotopic signatures of ancient known quarries. This was done separately for each group of sample according to its grain-size. The results are presented in figures 11-13.

From the above analysis and statistical treatments in combination of all the parameters, and also with the crystalline features and other macroscopic characteristics of the marble being taken into account (MANIATIS *et al.* 2010), we can assign the provenance of the marble of the items as shown in Table 3.

As it appears from the provenance result, the majority of the objects are made of Proconnesian marble. In particular, 16 out of the 21 objects are clearly Proconnesian while another three are also Proconnesian but may have some alternative provenance. There is only one made of Pentelic marble and one of Thasos_Aliki or Paros-Lakkoi. This shows a very strong Proconnesian connection which in the Byzantines times is easy to understand since the Proconnesian quarries were owned and managed by the Byzantine Emperors.

2 Our thanks go to Hans-Ruprecht Goette, German Archaeological Institute, Berlin for his help in identifying this fragment.

Conclusions

One of the main expectations from the provenance analysis is the basis for the tracing of the origin of the marble items. It seems that marble items from Apollonia of an architectural character could have come from or via Caesarea Maritima – the main marble supplier of the province. Another question which we tried to answer was the internal use/reuse of marble which could be hardly identifiable after their massive reuse and thus could support their relation with other items, not so radically recycled.

The Apollonia material and its analysis also revealed the distinction between architectural items and sculpture/statuary. It seems that architectural items have been provided from Proconnesos, and, as stated above, either by direct or transit transportation (via Caesarea Maritima). Various laboratory examinations carried out in the past (summed up in FISCHER 1998, 247-259) also suggested a Proconnesian origin for most of Caesarean objects. This seems to be correlated with the historical sources of the Byzantine period in general and the Talmudic sources in particular (FISCHER 2009b). One of the items (**Item 16**) seems to have originated in Thasos-Aliki, a provider of marble for both Christian and Jewish religious furniture in the Byzantine period (SODINI 2000). On the other side, some sculptural items (**Item 17**) are of different origin. Here, **Item 17** is of Pentelic marble, as is a *Totenmahlrelief* from the site published a couple of years ago (FISCHER, TAL 2003). In summary, this paper represents a further contribution to the identification of marble items and their origin in a geographical area with a ***longue durée*** and a very intensive reuse of building and artistic materials in Late Antiquity and the Middle Ages.

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