4 The Toilsome Journey of Marbles and Stones

Abstract: A general analysis of the use of marble in Ravenna between the 5th and the 6th century will consider in a Mediterranean perspective the modes in which marble and stone material were acquired and utilised. Furthermore, depending on the periods and patrons with adequate economic and cultural resources, it is possible to distinguish different phenomena in supplying and using marbles for the public buildings of the city, comprehending both *spolia* and commissioned artefacts. The political situation and the range of economic activities influenced time by time the architectural and decorative choices, attempting adaptations to the models and creating local styles.

Between the end of the 5th and 6th centuries, more than 1,500 tons of marble were shipped from Constantinople to Ravenna to serve in the construction of ecclesiastical structures. If we consider that this calculation, carried out by J. Harper approximately twenty years ago,¹ excludes elements of liturgical furniture such as ambos, slabs, transennae, revetments used to decorate the walls and floors, as well as the city's conspicuous series of sarcophagi, the overview reveals a truly sizeable trade in marble and stone. This phenomenon did not only concern quantity: while it is true that the choice of material was partially conditioned by the relative facility in which objects made of Proconnesian marble were able to be obtained and transported from the island located in the Sea of Marmara, it also presents aspects connected with the prestige associated with the location from which it was sourced. A significant instance illustrating the high regard connected with the use of this material recalls how the Church of Thasos, an island which numbered amongst the major exporters in Late Antiquity of a marble similar to the microasiatic type, had towards the end of the 4th century a bishop who, despite the availability of local material, opted to procure slabs of Proconnesian marble for use in the construction of an early christian basilica.²

The transport of architectural furnishings is a phenomenon that has been well-documented in textual sources. One example found in the seventh century *Miracula S. Demetrii* recounts how a bishop of Tina, Tunisia, who was desirous of

¹ Harper 1997, 146. The estimate made by J.G. Harper about the Proconnesian transport in the decades between 490 and 570, leads to a rough valuation of 1,556 tons.

² Gregorius Nazianzenus, *Carmen de Vita Sua*, in *PG* 37, c. 1089. On the exportation of the marble of Thasos: Sodini/Kolokotsas 1984; Barbin/Herrmann 1993; Herrmann/Barbin/Mentzos 1999; Kozelj/Wurch-Kozelj 1999.

imitating St. Demetrius in Thessaloniki, was able to obtain for his own church the entire contents of a ship bearing marble elements. Despite their having been originally destined for use at a different location, the saint's intervention ensured the miraculous delivery of columns, an ambo, and a ciborium, all of which were packed in straw and oakum for transport.³

In some cases, the archaeological documentation concerning naval shipments appears to correspond to the information conveyed by these historical sources. For instance, the famous shipwreck of Marzamemi dating to the Justinian Age, which emerged off the coast of Syracuse included twenty-eight bases, columns, and Corinthian capitals, as well as twelve slabs, pilasters, and smaller columns in Proconnesian marble. Additionally, the shipment contained one altar *mensa* carved from white marble and all of the elements necessary for an ambo featuring two stairs made of Green Thessalian stone.⁴ While a complete count has never been executed, studies on specific areas and categories of manufactured objects such as capitals⁵ or ambos⁶ appear to denote an economic phenomenon that was truly considerable and which would have reached all regions of the Mediterranean.

The primary difficulty in conducting a case-study impacting an area this vast is pinpointing homogenous situations in which the phenomenon regarding the transportation of marble from the East can be analysed through a prolonged period of time, consequently enabling the creation of an adequate base of knowledge, capable of being studied in relation to other sites. In this sense Ravenna is one of the most complete and interesting case-studies, notwithstanding the difficulties which can arise from a diachronic reading of its structures, and despite the well-known gaps in documentation.

While it is impossible to make a complete estimate of the imported elements as compared to those which were not, it is undoubtedly significant that of the 146 columns analysed in the *corpora* of churches by F.W. Deichmann, an astonishing 120

³ Magoulias 1976, 11–35; Lemerle 1979, 234–241; Lemerle 1981, 163–169; Sodini 1989, 170; Bakirtzis 2000, 1449–1454.

⁴ On the shipwreck of Marzamemi: Kapitän 1969; Kapitän 1971; Kapitän 1980; Bohne 1998; Castagnino Berlinghieri/Guzzardi 2014; Marsili 2015, 369–376; Paribeni./Castagnino Berlinghieri 2015. For the Byzantine shipwrecks and the commerce of Proconnesian marble, see Barsanti 1989; Kozelj/Wurch-Kozelj 1993; Asgari 1995, 263–288. Sodini/Barsanti/Guiglia Guidobaldi 1998; Barsanti 2002; Günsenin 2002; Makris 2002; Pensabene 2002; Pensabene 2004, 433; Kingsley 2004; Marano 2008; Castagnino Berlinghieri/Paribeni 2011; Russell 2012; Paribeni 2013; Russell 2013a; Russel 2013b; Castagnino Berlinghieri/Paribeni 2015; Pensabene 205. On the transfer of the workers: Sodini 1989; Russo 2010b.

⁵ See, for example, Kautzsch 1936; Deichmann 1981; Pralong 1993; Asgari 1995; Pralong 2000; Pensabene 2002; Beykan 2012.

⁶ On the ambos see, for example: Jakobs 1987 (Greece); Minguzzi 1992 (Venice); Iaţcu 2013 (Scythia).

of them were determined to be of Proconnesian marble.⁷ There are also entire series of reused manufactured objects, imported material from the Istrian coast and the subalpine zone; marks indicating workshops of Eastern provenance are present,⁸ however there is also evidence of local workmanship. Additionally, sources have also testified to the presence of specialized artisans from Rome. Therefore, this concerns a complex phenomenon of manufacture (Fig. 1), whose development can be followed at least in part by means of documentation in both written and material form.



Fig. 1: Ursiana Cathedral, ambo of bishop Agnellus (photo Baldini).

In the years following the transfer of the court from Milan to Ravenna in 402, an initial phase shows a prevalent phenomenon involving of the reutilisation of architectural material, to which only a few complementary elements were then added, these having been acquired expressly for the building's construction.

This situation is easily illustrated by the *Ursiana* Cathedral, which was demolished during the 18th century to make way for the present-day Duomo.⁹ While the exact architectural furnishings of the original church remain unknown, a 17th century manuscript by Lorenzo Calegati cites 48 columns which were "rather uneven both in width

⁷ Deichmann 1969; Deichmann 1974; Deichmann 1976; Deichmann 1989; Harper 1997, 132 (taking in account the cathedral and the churches of San Francesco, Santo Spirito, Sant'Apollinare Nuovo, Sant'Apollinare in Classe and San Vitale). See also Marano 2008, 163.

⁸ For a *Corpus* of the site-marks, see Marsili 2019.

⁹ Deichmann 1974, 3–13; Novara 1997; Zanotto 2007, 71–75; Verhoeven 2011, 27–29; Cirelli 2008, 214–215; Mauskopf Deliyannis 2010, 84–88.

and length". Likewise, he states that the capitals were "of varying sorts and each one dissimilar from the other".¹⁰ The presence of impost blocks was described in an illustration by G.F. Buonamici in the first half of the 18th century (Fig. 2).¹¹ In consequence, despite the difficulties involved with chronological contextualizing the placement of the architectural elements, the existence of a practice of reutilising columns and capitals can be hypothesized, with impost blocks having been commissioned *ad hoc*.

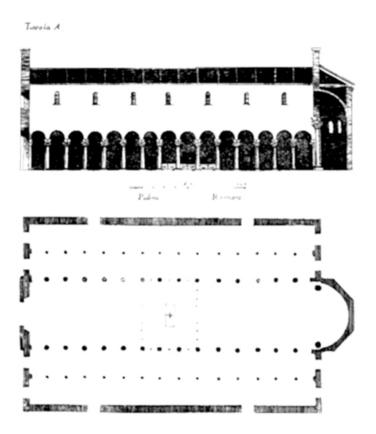


Fig. 2: Ursiana Cathedral, section of the church (from Buonamici 1748).

It is likely that the church of St. Lawrence, located in a suburb of Ravenna called Cesarea, embodied a similar character: a few sculptural architectural elements of

¹⁰ The text, preserved at the Archivio Arcivescovile of Ravenna (*Diversorum*, t. LVI, 185), is reported by G. Bovini: Bovini 1953, 70–71 ("alquanto disuguali sì in grossezza che in lunghezza"; "di varie sorti e tutti dissimili uno dall'altro").

¹¹ Buonamici 1748; Novara 1997, 68–76, with bibliography.

Imperial quality have survived, including two columns of Cipollino marble.¹² Within this same complex, which also contained a *monasterium* dedicated to Saints Gervasius and Protasius, an artefact was originally positioned which remains as a testimony in marble to the importance of the initial "Imperial" trade in the sector of funerary sculpture between Constantinople and Ravenna: a monumental sarcophagus made of Proconnesian marble dating to the last decade of the 4th century featuring the *Traditio Legis*, the Annunciation, the Meeting of Peter and Paul, and two symbolic animals on the sides of the *kantharos* (Fig. 3).¹³



Fig. 3: Constantinopolitan sarcophagus reused by the Pignatta family (photo Baldini).

Within the church of San Giovanni Evangelista, constructed between 426 and 450 by empress Galla Placidia as an *ex voto* after surviving a dangerous storm,¹⁴ the architectural elements included recycled bases, columns and capitals,¹⁵ while the impost blocks, numbering twenty-four, were realized *ex novo* for the building (Fig. 4). The accounts regarding this cathedral consist of only indirect sources, but this is surely the first case for which documentation exists of architectural sculpture being

¹² Regarding the complex: Deichmann 1976, 336–340; Baldini Lippolis 2003; Mauskopf Deliyannis 2010, 61–62; Rizzardi 2011, 61–63.

¹³ Baldini Lippolis 2003.

¹⁴ Deichmann 1974, 93–124; Farioli Campanati 1991, 251; Verhoeven 2011, 32–34; Mauskopf Deliyannis 2010, 63–70; Rizzardi 2011, 55–60.

¹⁵ Deichmann 1974, 103–104; De Maria 2000; Zanotto 2007, 90–111.



Fig. 4: Church of San Giovanni Evangelista, interior (photo Baldini).

directly imported from Constantinople, even if the church also contained many reutilized elements within.

One set of sculptural apparatus which was completely commissioned from the capital in the East is the *Apostoleion* (the present-day church of San Francesco), constructed during the episcopacy of Bishop Neon. This was also the place of interment for some of Ravenna's more prominent clergymen and leading members of the city's élite during Late Antiquity (Fig. 5).¹⁶ There are two sarcophagi preserved within the building (one of which is presently used as a main altar), (Fig. 6) which were imported from Constantinople and feature the *Traditio Legis*, niches, and apostles. These, together with the Pignatta sarcophagus from St. Lawrence, would constitute the first models for the flourishing development of the Ravennate school of funerary sculpture.¹⁷

The twenty-four bases, columns, capitals, and impost blocks from the *Apostoleion* made of Proconnesian marble are homogenous both in terms of material and work-manship. This choice of architectural material is especially significant given Ravenna's panorama: the decision could have been determined, at least in part, by a lesser availability of reusable architectural material within the city, but it is also probable that a willingness to adapt to other, more prestigious architectural models also played a significant role. This would have been in accordance with a phenomenon which was to occur in Ravenna with an even greater intensity during the reign of Theoderic and

¹⁶ Bovini 1964; Deichmann 1976, 309.; Baldini Lippolis 1997–2000; Mauskopf Deliyannis 2010, 102–103; Verhoeven 2011, 41–42; Novara 2016.

¹⁷ Bühl 1995, with bibliography.



Fig. 5: Church of Sts. Apostles, interior (photo Baldini).

would reach its apex during the age of Justinian. The significance of this being the first instance of the Imperial court determining the architectural choices and providing the means for their construction cannot be overlooked. The intention clearly having been to promote the reigning family's role in society, as well as to strengthen the bonds between Ravenna and the eastern capital, as reflected by the dedication of San Giovanni Evangelista and the positioning of the church near the port.

This aspect of dependence upon the cultural modes of the Bosphorus appears even more pertinent during the following decades, particularly standing out when one juxtaposes the Arian cathedral, which was probably constructed in the early years of Gothic dominion, and the palatine church dedicated to the Saviour during this period of Arian rule.

In the first building (Fig. 7)¹⁸ bases, columns, capitals, and impost blocks are of varying types of material and are probably of the work of craftsmen from Ravenna or northern Italy: in particular, the capitals, like the ambo featuring two stairs (Fig. 8),¹⁹

¹⁸ Deichmann 1974, 247–248; Cirelli 2008, 92–93; Mauskopf Deliyannis 2010, 174–177.

¹⁹ Deichmann 1974, 249–250.



Fig. 6: Constantinopolitan sarcophagus reused as mail altar of the church (photo Baldini).



Fig. 7: Santo Spirito (Arian cathedral), interior (photo Baldini).



Fig. 8: Santo Spirito, the ambo (photo Baldini).

are of Istrian stone, the same type utilised in the Mausoleum of Theoderic. The material's area of provenance is firmly connected with the Gothic kingdom's commercial trade, which included the importation of olive oil and wine, so much that it was called: "The Campania of Ravenna: the Imperial city's congenial and extremely pleasant pantry" (*"Ravenna Campania: urbis regiae cella penaria, voluptuosa nimis et deliciosa*").²⁰ The building stands out due to the local nature of its materials and manufacture, despite its having been inspired by models in Constantinople in its typological aspects and architectural elements. It could be hypothesized that the motive behind the choice made against the importation of architectural furnishings from the East was dependent upon economic factors, or perhaps it was reliant upon the supply system of material, as well as the nature of the relationship of the day between the Gothic realm and Constantinople.

²⁰ Cassiodorus, Variae XII, 22 (dated to 537-538).

In the case of the mausoleum,²¹ the decision to utilise stone from the Istrian caves for its masonry is directly related to the realisation of a truly intrepid project, which called for an enormous monolithic hemisphere weighing more than 250 tons to serve as the structure's roof, the *saxus ingens* cited by the Anonymous Valesianus (Fig. 9).²² For this building, an affinity can possibly be observed between the choice of such a particular architectural form and the instructions Theoderic issued regarding his funerary costume, in which the Gothic King hoped for the abandonment of a custom involving the of laying down of one's trousseau wrought in precious metal, in favour of a model expressly representative via the external decoration of the sepulchre with columns and marble.²³



Fig. 9: Theoderic's Mausoleum, monolithic capstone (photo Baldini).

The Gothic king's interest in funerary settings and regulations is also evident in a related episode involving a sculptor named Daniel, whose ability consisted in the "carving and decoration of marbles" (*"in excavandis atque omandis marmoribus"*).²⁴ It was to this person that Theodoric in 509–510 issued an authorisation in the managing of production and sales of sarcophagi in Ravenna, in an attempt to avoid excessive speculation in this sector.

²¹ Deichmann 1974, 211–239; Mauskopf Deliyannis 2010, 124–136.

²² Excerpta Valesiana II, 96.

²³ Cassiodorus, Variae IV, 34.

²⁴ Cassiodorus, Variae III, 19.

At any rate, the Arian cathedral and the mausoleum constitute an architectural area of interest within themselves when compared to other buildings erected during the same period. In general, the need to economize is the prevailing factor, as apparent in the use of spolia. According to common practice, marble elements and columns from a variety of locations (*Histonium*,²⁵ presently Vasto, *Faventia*²⁶) as well as from the *domus Pinciana* in Rome²⁷ were requested for use in Ravenna's buildings. In a letter from Cassiodorus, for the basilica Herculis, Theoderic asks Agapitus, the praefectus urbi in Rome, to send a team of marmorarii, or craftsmen who excelled in recomposing separate sheets of marble to Ravenna, aligning the sections in a manner that would imitate and play upon the material's natural veining, the result of which would have drawn praise for their natural resemblance ("qui eximie divisa coniungant, ut venis colludentibus illigata naturalem faciem laudabiliter mentiantur").²⁸ Regarding this same monument, which has unfortunately since been destroyed, it has been hypothesized that it once featured a bas-relief currently housed at the Museo Nazionale in Ravenna (Fig. 10) made of Proconnesian marble which depicts the labours of Herakles.²⁹ One should not exclude the probability that the marble slabs described by Cassiodorus arrived from Rome along with the *marmorarii*, in a scenario which would better explain the necessity for artisans from Rome. Otherwise, this construction could testify to a case involving the importation of an entire set of decorative marbles from the Eastern capital.

From these examples, a composite and heterogeneous architecture begins to appear, with an attempt made to balance the economic factor with the representative tone of the monuments. The importance assigned to the palatine church of the *Theodericianum* (Sant'Apollinare Nuovo)³⁰ also emerges in a meaningful manner, as evidenced by the fact that all of the internal architectural elements (bases, columns, capitals, as well as impost blocks) are composed of Proconnesian marble of the highest quality (Fig. 11).

Likewise the ambo, of the same type of marble, was certainly sculpted in Constantinople and can be compared to the finest productions from the capital's workshops (Fig. 12).³¹

The investment made in the architectural outfitting in marble for the church of Sant'Apollinare Nuovo,³² computable to at least 94 tons of marble material, characterizes

²⁵ Cassiodorus, Variae III, 9.

²⁶ Cassiodorus, Variae V, 8.

²⁷ Cassiodorus, Variae III, 10. Anguissola 2002.

²⁸ Cassiodorus, Variae I, 6.

²⁹ Kennell 1994; Farioli Campanati 2005, 15–16; Mauskopf Deliyannis 2010, 123; Russo 2010a.

³⁰ Deichmann 1974, 127–189; Penni Iacco 2006; Mauskopf Deliyannis 2010, 146–174; Verhoeven 2011, 43–45.

³¹ Vernia 2005, with bibliography.

³² Farioli Campanati 1991, 251.



Fig. 10: Museo Nazionale, marble panel with Herakles and the Stag of Ceryneia (photo Baldini).

a willingness to realise a monument of an extremely high standard and worthy of a court finding itself confronted with monumental forms. These forms prescinded the local tradition when it came to both material and models to base itself upon, something that was made even more evident in the mosaics displayed upon the church's walls.³³

With this structure, the Theoderician rule signalled an effective turning point regarding its profuse economic commitment, establishing a practice – which was already present in Ravenna – of importing marble from the East. For example, in 534 a Praetorian prefect from Ravenna requested Justinian's attention in the name of Amalasuntha and Theodahad in order to facilitate the arrival of the "*marmora vel alia necessaria*" ordered by the two Gothic sovereigns from Constantinople. Unfortunately, the transaction remained unfulfilled due to the death of Calogenitus, the *portitor*

³³ Rizzardi 2011, 87–105.

³⁴ Cassiodorus, Variae X, 8, 2.



Fig. 11: Sant'Apollinare Nuovo, capital (photo Baldini).



Fig. 12: Sant'Apollinare Nuovo, the ambo (photo Baldini).

(the bearer of the letter) charged with effectuating the purchase.³⁴ After the end of Gothic rule, the Church of Ravenna once again assumed the primary responsibility of erecting public buildings of a religious nature: while the episcopacy of Agnellus focused its attention on ideological aspects and the censure of images related to the buildings' Arian past, the period of Archbishop Maximian would be known for undertaking the largest building projects that Ravenna would conceive during Late Antiquity.

The church of San Vitale was built around 540–548, with construction initially ordered by Bishop Ecclesius. It would eventually be completed by Maximian,³⁵ thanks to a payment of 26,000 *solidi aurei* paid by a banker named Julianus.³⁶ Its interior would necessitate an extraordinary 188 tons of marble,³⁷ not including elements such as enclosures (slabs, transennae) and liturgical furniture (Fig. 13).



Fig. 13: San Vitale, galleries (photo Baldini).

This is the building with the largest amount of marble manufactured objects in Ravenna; in this sense it is the most expensive monumental structure, even when one does not consider the costs involved in the production of its precious mosaics. The high sum paid by Julianus for the completion of the work doubtlessly reflects the complexity of the construction process, which included everything from the acquisition of building material to the sculptural apparatus, decorative elements and labour.

³⁵ Deichmann 1969, 226–256; Deichmann 1976, 47–232; Mauskopf Deliyannis 2010, 223–250; Rizzardi 2011, 128–146; Verhoeven 2011, 46–49.

³⁶ Cosentino 2006; Cosentino 2014a.

³⁷ Harper 1997, 145.

The project in and of itself was more expensive than the approximately coeval Basilica at Classe (532–549),³⁸ for which 150 tons of Proconnesian marble in the form of architectural elements were imported, including bases, columns, capitals, and impost blocks (Fig. 14).³⁹ As far as the liturgical furniture was concerned, the case of the main altar's ciborium decisively reflects the complexity of the sequence of events which were involved in the church since its initial construction. By referring to written texts and archeological data, it is possible to reconstruct at least five interventions enacted upon this object. Two "two-zone" capitals similar in dimension, form and style from the Museo Arcivescovile (Fig. 15)⁴⁰ may possibly be associated to the first ciborium: a ram's horn fragment currently housed in the Museo Nazionale, which was originally unearthed from beneath the seventeenth-century floor to the right of the crypt located within the presbytery, has been confirmed as having originated from one of these capitals.⁴¹ In this case, when reconstructed, the ciborium would correspond by typology to those in the episcopal churches at Gortyn (6th century)⁴² or Poreč (13th century, with capitals from 549–560).⁴³ It is



Fig. 14: Sant'Apollinare in Classe, "windblown" capital (photo Baldini).

- 42 Inv. 6369. Baldini 2000, 1140.
- 43 Russo 1991.

³⁸ Deichmann 1969, 257–278; Deichmann 1976, 233–282; Mauskopf Deliyannis 2010, 259–274; Rizzardi 2011, 146–165; Verhoeven 2011, 50–52.

³⁹ Harper 1997, 145.

⁴⁰ Novara 2011.

⁴¹ Pavan 1978, 255.



Fig. 15: Museo Arcivescovile, "two zone" capital (photo Baldini).

difficult to establish whether the ciborium shown in the so-called Panel of the Privileges can be dated to the 6th century (Fig. 16), as per the chronological dating proposed by Corrado Ricci for this portion of the mosaic,⁴⁴ or rather to the reworking of this section done during the second half of the 7th century, when the scene would have assumed a strong propagandist meaning meant to favor the Church of Ravenna.⁴⁵ The structure depicted in the mosaic in gold and silver, topped with a cross, presents a characteristic roof in the shape of a hemisphere, which is also seen in variant forms at the Katapoliani of Paros (6th century),⁴⁶ at St. Euphemia in Constantinople,⁴⁷ and in a votive structure rendered in Proconnesian marble (6th century) today kept in the Treasury of San Marco in Venice.⁴⁸ Consequently, that form is compatible with a dating from either the 6th or 7th century, making this method of analysis difficult to resolve problems relating to its chronology.

⁴⁴ Ricci 1935.

⁴⁵ Cosentino 2014b: the partial reconstruction of the mosaic during the episcopate of Reparatus would belong the offering of the ciborium by exarch Theodorus (678–687). The gift of a ciborium recurs in Ravenna in the basilica Ursiana (a ciborium made of silver, at the behest of archbishop Victor, in the first half of the 6th century). In the church of St. Peter in Rome, exarch Eutichius offered a ciborium in the first half of the 8th century.

⁴⁶ Jewell/Hasluck 1920.

⁴⁷ Naumann/Belting 1966, 95–98.

⁴⁸ Inv. n. 9.



Fig. 16: Sant'Apollinare in Classe, so-called Panel of the Privileges, ciborium (photo Baldini).

It is possible to attribute a restoration of the altar and ciborium to the time of archbishop John the Younger (John VI: 774–784), a treatment which consisted of gilding the marble in silver and the placement of a bejeweled cross above, as reported by Vitale Acquedotti (1512) who transcribed the text from a ninth-century epigraph located above the marble ciborium.⁴⁹ This intervention was in fact done by order of the archbishop Dominicus Ublatella (889–897), who was also responsible for the construction of the church's crypt, which was destined to host the patron saint's relics.

In 1637, four columns of black Aquitania marble located within the presbytery of Sant'Apollinare, were acquired by Virgilio Spada.⁵⁰ They were eventually returned, permitting abbot Gabriel Maria Guastuzzi to comment upon them before the demolition of 1723.⁵¹ This layout of the main altar was maintained until 1908, when

⁴⁹ Mazzotti 1954, 84.

⁵⁰ Mazzotti 1954, 94.

⁵¹ Mazzotti 1954, 100. It is possible that those items came from the nearby basilica of San Severo, in which a document of 1465 testifies the presence of "*columnae nigrae*" between the materials set aside by the Venetians.

Corrado Ricci had these supports removed and placed on the sides of the lateral doors of the basilica, where they can still be seen (Fig. 17).⁵²



Fig. 17: Sant'Apollinare in Classe, columns of black Aquitania marble (photo Baldini).

Apart from the high altar's ciborium, in the 16th century there existed in the center of the basilica a second ciborium dedicated to the Virgin with columns of porphyry. Vitale Acquedotti, in his transcriptions of epigraphs still visible in his time, recorded a dedication to Ursus, the abbot of the monastery in Classe, in an inscription upon the structure dating from the time of archbishop Dominicus Ublatella.⁵³ On the other hand, the position of the altar's base in the center of the basilica coincided with the location of the transfer of the burial of Saint Apollinaris from the exterior to the interior of the basilica by the archbishop Maurus (642–671), according to the testimony of Agnellus.⁵⁴

⁵² Mazzotti 1954, 112.

⁵³ Mazzotti 1954, 84.

⁵⁴ LPRa 34.

In 1953 excavations conducted by Mazzotti in the vicinity of the base which sustained the altar appeared to verify the Agnellus' testimony: it was verified that beneath the great slab only one construction composed of stone conglomerate was found, without a trace of burial beneath it.⁵⁵ However, the analysis of this decorated base of Proconnesian marble and the traces of reworking to which it was subjected over time (Fig. 18), could suggest a different meaning. Indeed, the measurements of the structure appear to coincide with those reconstructed for the Roman sarcophagus believed to be the tomb of Saint Apollinaris, whose lid featuring a pitched roof with acroteria was unearthed by Mazzotti during his excavation of the crypt.⁵⁶

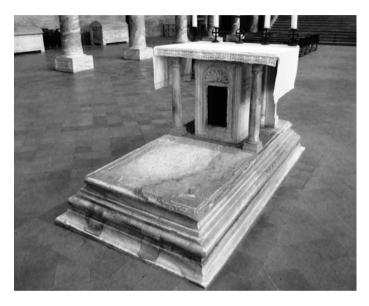


Fig. 18: Sant'Apollinare in Classe, altar in the main nave (photo Baldini).

An exhibition of the funerary monument of the first bishop of Ravenna (Fig. 19) could concurs with practice in the Near East and Ravenna (San Severo in the period of bishop John Romanus, 578–595).⁵⁷ This reconstruction explains not only the precise reference Agnellus makes regarding its location *in medio templi*, but it appears to coincide with as much exactness as possible with a later story regarding the burial site: it was transferred in the 9th century to the interior of the crypt immediately upon its completion

⁵⁵ Mazzotti 1954, 89-91.

⁵⁶ Mazzotti 1986, 216.

⁵⁷ LPRa 29.

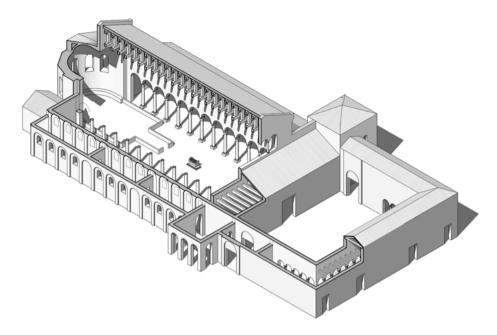


Fig. 19: Proposal of the 6th century position of the sarcophagus of St. Apollinaris (arch. C. Lamanna).

and was later the subject of the celebrated *inventio* of 1173 meant to establish the presence of the relics of Saint Apollinaris inside the basilica in Classe.

One last observation concerns the spreading of marble material that was once present within the church. As Andreas Agnellus writes, because of the marbles it shined "day and night".⁵⁸ The dispersion covers an extremely vast geographical area, as demonstrated by examples such as the tale of the porphyry slab described by Andreas Agnellus in his account of the burial of the bishop Maurus (642–671),⁵⁹ which was originally located at the far northern end of the narthex: it was said to shine like glass, so much that it reflect the exterior of the church from the side of the basilica of San Severo (hence, towards the north). Twelve years earlier, during the time of bishop Petronace (817–835), the object had been removed by Lothair and taken to France wrapped in wool and packed in a wooden crate in order to serve as an altar *mensa* for a place only identified vaguely as Saint Sebastian. Agnellus himself was charged with ensuring the slab's intact and damage-free arrival, a charge he was not enthusiastic to carry. The connection between this episode and a shipment organized by Louis the Pious to the papal court in Italy remains unexplained, in which Lothair, together with Ilduin, abbot of St. Denis, were involved. This last

⁵⁸ LPRa 24.

⁵⁹ LPRa 34. A different reading in Mauskopf Deliyannis 2010, 298.

person was able to convince Pope Eugene II (824–827) to give him relics related to St. Sebastian. 60

Upon his return to France in 826, these were deposited in the famous abbey of St. Médard in Saissons, where they were placed together with those of the abbey's titular saint.⁶¹ When one reconstructs the context of the situation, it becomes easy to understand the motivation on the part of Agnellus to omit certain evident particulars, given the notoriety of the episode and the context of the monuments being referred to. One can also comprehend the sense of the removal of the great porphyry slab by Lothair, which was committed in the tradition of spoliation of marble material destined for reutilization in imperial sites as already done previously by Charlemagne, and a willingness to contribute a precious gift to a location that was also known for its possession of prestigious relics of Saint Sebastian.

Unfortunately, it must be added that there now remain no traces of this marble slab from Ravenna: history records that the monastery of Saissons was the subject of numerous destructive attacks, the final one occurring during the French Revolution, which saw it completely razed it to the ground. To add to the story of the marble slab, it is interesting to note that, as with the chronology of the story recounting the events, Agnellus' text can be dated approximately to 838.

The long development of the liturgical apparatus of Sant'Apollinare in Classe is one of the best expressions of the importance of the local Church over time. In the 6th century phase, Julianus *argentarius* also intervened to economically sustain the church, and the same happened with the basilica of San Michele *in Africisco*,⁶² which he financed together with his relative, Bacauda. While few elements of architectural sculpture remain of this basilica, those that remain completely correspond to the typologies utilised in Constantinople during the same period,⁶³ a signal of their commitment to follow the latest architectural trends.

Both the churches of San Vitale and Sant'Apollinare were consecrated during the episcopacy of Maximian, to whom Andreas Agnellus also attributes the acquisition of marble from Constantinople for use in the churches of St. Stephen (550)⁶⁴ and St. Andrew (560).⁶⁵ An anecdote which relates to the first of these two buildings recounts how an insufficiency of architectural and building material arose while the archbishop was away on a trip to the capital, whereupon after just one night there was a sudden, unexpected appearance of a supply, all thanks to his intervention. This demonstrates the close relationship between the governing clergyman's

⁶⁰ Geary 1990, 46.

⁶¹ Annales regni Francorum, ad a. 826.

⁶² Deichmann 1969, 220–225; Deichmann 1976, 35–45; Mauskopf Deliyannis 2010, 250–254; Rizzardi 2011, 123–128.

⁶³ Porta 2007.

⁶⁴ LPRa 72–73. Deichmann 1976, 372–374; Mauskopf Deliyannis 2010, 255–256.

⁶⁵ LPRa 76. Deichmann 1976, 306; Harper 1997, 141; Mauskopf Deliyannis 2010, 256.

personality and prestige, and the importation of the material, which in this case was possibly commissioned personally by Maximian himself, as the tale implies. Another example dating just previous to this event concerns Lawrence, the bishop of Siponto, who was able to obtain material and artisans (*doctissimi artifices*) from the emperor in the East for the construction of a church and baptistery.⁶⁶

What makes the St. Stephen episode so exceptional is when one considers the amount of time required for an order of marble to undertake its voyage. The minimum amount of time estimable for a journey to be completed from Constantinople to Ravenna (1,270 nautical miles) was approximately nine or ten weeks,⁶⁷ hence taking (between departure and return) the entire summer season, which was the one utilized for navigation.⁶⁸

The shipping cargo,⁶⁹ an estimate based upon data inferable from the naval shipments of Marzamemi (66 to 67 metric tons + the vessel),⁷⁰ was in the 6th century equal to approximately 60 tons: in order to transport the 188 tons of architectural elements utilised in San Vitale as well as the addition of material related to the liturgical furnishings, at least four vessels would have been necessary, whereas an inferior number would have been needed for Sant'Apollinare in Classe (three) or for Sant'Apollinare Nuovo (two). While archaeological documentation may be lacking, the possibility that even larger ships were used cannot be excluded,⁷¹ such as the one which foundered near the Isola delle Correnti (Calabria) with an estimated cargo of 350 tons.⁷²

By the late antique period the collection of imported marble in Ravenna was probably already being undertaken in a northern quarter of the city memorialised by the toponym *marmorata*, in reference to the church of St. Stephen⁷³ and to another church dedicated to St. John the Baptist, as documented by a text written around 1017.⁷⁴ This latter church was located outside of the *Guarcinorum* (S. Vittore) and *Anastasia* Gates, at the intersection of the Padenna and a canal which flowed from the eastern port, near one of the principal roads of the city, the *platea Maior*. It is particularly indicative

⁶⁶ Campione 2004, with bibliography.

⁶⁷ According to Andreas Agnellus, nobody would be able to go and come back from Constantinople in less than three months, as shown specifically in reference to the story of the priest John of Ravenna at the time of Bishop Damianus (*LPRa* 32). This calculation was based on the travel time at about 2.5 knots, similar to the one covered by the Venetian ships in the Middle Ages: Harper 1997, 142–143.

⁶⁸ Harper 1997, 142.

⁶⁹ On the ships: Bonino 1991; Makris 2002, 157; Rautman 2006, 150–156; Kingsley 2009.

⁷⁰ Kapitän 1980, 120: 2775 metric tons per cubic meter. Harper 1997, 144.

⁷¹ Makris 2002, 157. Bonino 1991 considers a load of about 100 tons for Sant'Apollinare Nuovo and 180–250 tons for Sant'Apollinare in Classe.

⁷² Kapitän 1971, 304.

⁷³ Farioli Campanati 1992, 135, with bibliography.

⁷⁴ Farioli 1961, 19–20; Deichmann 1976, 331; Mascanzoni 1993, 402; Harper 1997, 134; Cirelli 2008, 238, n. 170 and 251, n. 254.

that in the 12th century the church of St. John the Baptist which was possibly the original site of the *statio marmorum* of Ravenna,⁷⁵ was also the place where the standardized measurements utilised in trade were kept, and still in the 13th century the presence of a market was mentioned in relation to this building.⁷⁶

The episcopacy of Maximian therefore signals a key moment in the marble commerce in Ravenna. The city had long since appeared to have been engaged in building a series of complementary projects in concert with this trade, which were in turn important for its economic development. These projects included: transportation at sea, the subsequent movement of these goods from the port to their final destination, their completion and preparation for use, and their implementation. Also critical was the commerce surrounding the sarcophagi and the reworking of earlier tombs, as well as the adjustment of wall revetments and floor slabs some of which were later destined to be used in the production of non-vitreous tesserae for mosaics.

The case of Julianus notwithstanding, private commissions, as described in the aforementioned tableau, do not appear to have had a significant impact within the sector of funerary sculpture: for example, no elements have emerged from the *domus* of Ravenna dating to Late Antiquity which clearly reflect the purchase of imported architectural elements by private citizens. This impression can be conditioned only in part by the dispersal of material. For example, in the case of the house on Via d'Azeglio, investigated during the early 1990s, not even fragments of what could have been columns have emerged: the floor and wall panelling is in *sectilia* (Fig. 20), which is generally composed of pieces taken from what were once larger slabs.⁷⁷

The same consideration could conceivably be applied to the Imperial *palatia*, for which there is still only scarce documentation (both archaeological and iconographic) available to provide an adequate evaluation of the decorative apparatus: indeed, the residences of the court in Ravenna are known from historical sources only in relation to the layout of the walls of a few specified locations,⁷⁸ the lone exception being that of the *Theodericianum* near Sant'Apollinare Nuovo, from which only a very few original sculptural elements survive (Fig. 21).⁷⁹

In conclusion, despite still necessitating more precise quantitative calculation, the tableau presented by Ravenna permits a deeper analysis of the problem regarding the modes in which marble and stone material were acquired and utilised, by means of a particularly revealing and significant case study. Imperial authority is almost never expressly cited, yet in reality it is regarded as the principal authority of a complex system involving the management of public monument building, which also included structures which were no longer in use yet were endowed with

79 Baldini Lippoli 1992.

⁷⁵ Harper 1997, 134; regarding the statio marmorum of Rome see: Maishberger 1997.

⁷⁶ Pini 1993, 535.

⁷⁷ Baldini Lippolis 2004.

⁷⁸ Baldini Lippolis 1996.

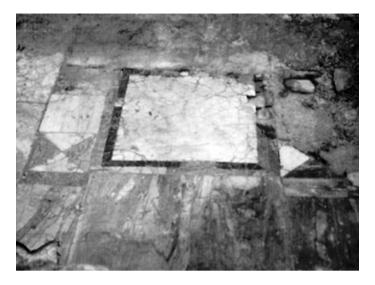


Fig. 20: Floor sectilia from the late antique domus of via d'Azeglio (photo Baldini).



Fig. 21: National Museum, capital from Theoderic's palace (photo Baldini).

ornatus.⁸⁰ This may at least partially explain the large amount of *spolia* utilised in Ravenna's churches during the Theodosian dynasty (San Lorenzo in Cesarea, San Giovanni Evangelista): the imported elements were limited and contributed tone to the structures, signalling a privileged relationship with the capital, as witnessed in the case of the impost blocks, which were precociously introduced to Ravenna from the East.

By contrast, with regard to the *Apostoleion*, it is the Church of Ravenna which sustained the construction: unable to make direct use of the *spolia*, considering the laws of the day that were in force, it was decided against requesting the reuse of material already available locally. Instead, the entire sculptural apparatus was commissioned from Constantinople, making way for a practice that would later be resumed with regularity after the period of Gothic rule.

Theoderic and his successors appear to have found themselves in an intermediate period, where there was direct access to both the *spolia* and stone obtained from certain territories (the cities cited by Cassiodorus, as well as from Istria). However, there was still acknowledgment of the prestigious role importing material from Constantinople played, a practice which in fact was to be utilised in the palatine church, a significant building from both a religious and political point of view.

Lastly, it is with Maximian that the close relationship with the Eastern court seems to transform according to a representative model which was already consolidated, as the practice of importing Proconnesian material intensified and witnessed bishops become promoters and protagonists, sustained in their building projects by private benefactors (Julianus and Bacauda).

As a consequence, the toilsome voyage of stone and marble comprehends both *spolia* and commissioned works, according to the choices and resources of the patrons, with differing trends seen throughout the changing periods. On the one hand, the government's availability to draw upon earlier monuments emerges in Ravenna and other pertinent locations, as particularly evidenced by documentation from the Theoderician age. On the other, there exists the willingness on the part of the Church of Ravenna to exhibit an adherence to models in Constantinople by means of impressive commissions of architectural material, which, along with other decorative elements, were intended to qualify the importance of the constructions and the capacity expressed by this same episcopacy.

⁸⁰ Janvier 1969; Baldini 2007.

Bibliography

Primary Sources

Annales regni Francorum inde ab a. 741 usque ad a. 829, qui dicuntur Annales Laurissenses maiores et Einhardi, recensuit F. Kunze, Hannoverae 1895 (Scriptores rerum Germanicarum in usum scholarum ex Monumentis Germaniae Historicis separatim editi, 6).

Excepta Valesiana, recensuit J. Moreau, edictionem correctiorem curavit V. Velkov, Lipsiae 1968.

Secondary Sources

- Anguissola, Anna. 2002. "Note alla legislazione su spoglio e reimpiego di materiali da costruzione ed arredi architettonici, I sec. a.C. VI sec. d.C." In *Senso delle rovine e riuso dell'antico*, edited by Walter Cupperi, 13–29. Pisa 2002.
- Asgari, Nursin. 1995. "The Proconnesian Production of Architectural Elements in Late Antiquity, based on Evidence from the Marble Quarries." In *Constantinople and its Hinterland* (Papers from the Twenty-seventh Spring Symposium of Byzantine Studies) edited by Cyril Mango and Gilbert Dagron, 263–288. Aldershot.
- Bakirtzis, Charalambos. 2000. "Un miracle de Saint Démétrius de Thessalonique au Maghreb", *L'Africa Romana*, XIII, 1449–1454. Roma.
- Baldini, Isabella. 2000. "La basilica di Mitropolis: problemi di scultura architettonica", in *Creta romana e protobizantina*, edited by M. Livadiotti, I. Symiakaki, 1133–1145. Padova.
- Baldini, Isabella. 2007. "Private space in late antique cities: laws and building procedures."
 In *Housing in late antiquity: from Palaces to Shop*, edited by Luke Lavan, Lale Ozgenel and Alexander Sarantis, 197–237. Leiden-Boston.
- Baldini Isabella et al. Forthcoming. "Ricerche sui materiali marmorei e lapidei di età tardoantica a Ravenna. In *Economia e territorio nell'Adriatico centrale tra tarda Antichità e alto Medioevo (IV-VIII secolo)*, edited by Enrico Cirelli, Enrico Giorgi and Giuseppe Lepore.
- Baldini Lippolis, Isabella. 1992. "Un capitello tardoantico figurato dal Palazzo di Teoderico a Ravenna." *Felix Ravenna*, 141–144: 129–144.
- Baldini Lippolis, Isabella. 1996. "Articolazione e decorazione del palazzo imperiale di Ravenna." CARB XLIII: 1–31
- Baldini Lippolis, Isabella. 1997–2000. "Sepolture privilegiate nell'*Apostoleion* di Ravenna." *Felix Ravenna* 153–156: 15–79.
- Baldini Lippolis, Isabella. 2003. "S. Lorenzo in Cesarea e il problema di lettura iconografica del sarcofago Pignatta", in Atti del VII Congresso Nazionale di Archeologia Cristiana (Cassino, 20/24 settembre 1993), 225–240. Cassino.
- Baldini Lippolis, Isabella. 2004. "La chiesa di S. Eufemia ad Arietem; Il culto di S. Eufemia a Ravenna; Periodo bizantino, Gli ambienti." In Archeologia urbana a Ravenna. La "Domus dei Tappeti di Pietra". Il complesso archeologico di via D'Azeglio, edited by Giovanna Montevecchi, 71–79. Ravenna.
- Barbin, Vincent and Hermann, John J. 1993. "The exportation of marble from the Aliki quarries on Thasos. Cathodoluminiscence of samples from Turkey and Italy." *American Journal of Archaeology* 97: 91–103.
- Barsanti, Claudia. 1989. "L'esportazione di marmi dal Proconneso nelle regioni pontiche durante il IV-VI secolo." *Rivista dell'Istituto Nazionale di Archeologia e Storia dell'Arte* 12: 91–220.

- Barsanti, Claudia. 2002. "Capitelli di manifattura costantinopolitana a Roma." In *Ecclesiae Urbis*, edited by Federico Guidobaldi and Alessandra Guiglia Guidobaldi, 1443–1478. Città del Vaticano.
- Beykan, Müren. 2012. *Ionische Kapitelle auf Prokonnesos: Produktion und Export römischer Bauteile*. Tübingen.
- Bohne, Anke. 1998. "Das Kirchenwrack von Marzamemi. Handel mit Architekturteilen in frühbyzantinischer Zeit." *Skyllis* 1.1: 6–17.
- Bonino, Marco. 1991. "Archeologia *navale*", *Storia di Ravenna*, II/1, *Dall'età bizantina all'età ottoniana*, edited by Antonio Carile, 27–53. Venezia.
- Bovini, Giuseppe. 1953. "Qualche appunto sull'antica Cattedrale di Ravenna." *Felix Ravenna* 10: 59–84.
- Bovini, Giuseppe. 1964. La "Basilica apostolorum", attuale chiesa di S. Francesco di Ravenna. Ravenna.
- Buonamici, Gianfrancesco. 1748. Metropolitana di Ravenna. Bologna.
- Bühl, Gudrun. 1995. "Der sogenannte Liberius-Sarkophag in San Francesco zu Ravenna: echt oder unecht?" CARB 41: 77–108.
- Campione Ada. 2004. "Lorenzo di Siponto. Un vescovo del VI secolo tra agiografia e storia." *Vetera Christianorum* 41: 61–82.
- Castagnino Berlinghieri, Elena F. and Paribeni, Andrea. 2011. "Byzantine Merchant Ships and Marble Trade. New Data from the Central Mediterranean. In Memory of Gerhard Kapitän (1920–2011)." *Skyllis* 11.1: 64–75.
- Castagnino Berlinghieri, Elena F. and Guzzardi, Lorenzo. 2014. "Nuovi" elementi architettonici della "basilica" a bordo della navis lapidaria di Marzamemi." In Atti del III Convegno di Archeologia Subacquea, edited by Giuliano Volpe, Maria Turchiano and Danilo Leone, 49–56. Bari.
- Castagnino Berlinghieri, Elena F. and Paribeni, Andrea. 2015. "Marble production and marble trade along the Mediterranean coast in Early Byzantine Age (5th-6th centuries): data from quarries, shipwrecks and monuments." *SOMA 2011. Proceedings of the 15th Symposium on Mediterranean Archaeology*, edited by Pietro Maria Militello, Hakan Öniz, II: 1033–1041. Oxford.
- Cirelli, Enrico. 2008. *Ravenna: archeologia di una città*. Firenze.
- Cosentino, Salvatore. 2006. "Le fortune di un banchiere tardoantico. Giuliano argentario e l'economia di Ravenna nel VI secolo", in *Santi banchieri re. Ravenna e Classe nel secolo VI*, edited by Andrea Augenti and Carlo Bertelli, 43–48. Milano.
- Cosentino, Salvatore 2014a. "Banking in early Byzantine Italy." *Cahiers de recherches médiévales et humanistes* 28: 243–254.
- Cosentino, Salvatore. 2014b. "Constans II, Ravenna's Autocephaly and the Panel of the Privileges in St. Apollinare in Classe: A Reappraisal", Aureus. *Volume dedicated to Professor Evangelos K*. Chrysos, edited by Taxiarchis G. Kolias, † Konstantinos P. Pitsakis, with the collaboration of Catherine Synellis, 153–169. Athens.
- Deichmann, Friedrich W. 1969. Ravenna, Hauptstadt des spätantiken Abendlandes, 1. Ravenna, Geschichte und Monumente. Wiesbaden.
- Deichmann, Friedrich W. 1974. *Ravenna, Haupstadt des spätantiken Abenlandes, Kommentar*, 1. Wiesbaden.
- Deichmann, Friedrich W. 1976. *Ravenna, Haupstadt des spätantiken Abenlandes, Kommentar, 2.* Wiesbaden.
- Deichmann, Friedrich W. 1981. Corpus der Kapitelle der Kirche von San Marco zu Venedig. Wiesbaden.

- Deichmann, Friedrich W. 1989. *Ravenna, Hauptstadt des spätantiken Abenlandes*, Band II, Kommentar, 3. Teil, Geschichte, Topographie, Kunst und Kultur, Stuttgart.
- De Maria, Sandro. 2000. "Cultura figurativa: la decorazione architettonica." In Aemilia. *La cultura romana in Emilia Romagna dal III sec. a.C. all'età costantiniana*, edited by Mirella Marini Calvani, 288–299. Venezia.
- Farioli, Raffella. 1961. "Ravenna paleocristiana scomparsa." Felix Ravenna 83: 5–88.
- Farioli Campanati, Raffaella. 1991. "La scultura architettonica e di arredo liturgico alla fine della tarda antichità: i rapporti con Costantinopoli. In *Storia di Ravenna*, II/1. *Dall'età bizantina all'età ottoniana*, edited by Antonio Carile, 249–267. Venezia.
- Farioli Campanati, Raffaella. 1992. "Ravenna, Costantinopoli: aspetti topografico-monumentali e iconografici." In *Storia di Ravenna* II/2. *Dall'età bizantina all'età ottoniana*, edited by Antonio Carile, 127–158. Venezia.
- Farioli Campanati, Raffaella. 2005. "Ravenna e i suoi rapporti con Costantinopoli: la scultura (secoli V.-VI)." In *Venezia e Bisanzio. Aspetti della cultura artistica bizantina da Ravenna a Venezia (V-XIV secolo*), edited by Clementina Rizzardi, 13–43. Venezia.
- Geary, Patrick J. 1990. Furta sacra: *la trafugazione delle reliquie nel Medioevo (secoli IX-XI)*. Trad. it. Milano.
- Günsenin, Nergis. 2002. "Medieval Trade in the Sea of Marmara: the Evidence of Shipwrecks." In *Travels in the Byzantine World*, edited by Ruth Macrides, 125–135. Aldershot.
- Harper, James G. 1997. "The Provisioning of Marble for the Sixth-Century Churches of Ravenna: A Reconstructive Analysis." In Pratum Romanum. *Richard Krautheimer zum 100. Geburstag*, edited by Renate L. Colella, Meredith J. Gill, Laurence A. Jenkens, Petra Lamers, 131–148. Wiesbaden.
- Herrmann, John J., Barbin, Vincent and Mentzos, Aristotle. 1999. "The exportation of marble from Thasos in Late Antiquity. The quarries of Aliki and cape Fanati." In *Thasos: Matières premières et technologie de la préhistoire à nos jours*, edited by Caido Koukouli-Chrysanthaki, Arthur Muller and Stratis Papadopoulos, 75–90. Paris.
- laţcui, Ioan. 2013. "The ambos of the Christian basilicas within the province of Scythia." *Studia Antiqua et Archaeologica* 19: 49–78.
- Jakobs, Peter H.F. 1987. Die frühchristlichen Ambone Griechenlands. Bonn.
- Janvier, Yves. 1969. La législation du bas-empire romain sur les édifices publics. Aix en Provence.
- Hasluck, Frederick W. and Jewell, Harry H. 1920. *The Church of Our Lady of the Hundred Gates* (*Panagia Hekatontapyliani*) in Paros. London.
- Kapitän Gerhard. 1969. "The Church Wreck of Marzamemi." Archaeology 22, 2: 122–133.
- Kapitän, Gerhard. 1971. "Esplorazioni su alcuni carichi di marmo e pezzi architettonici davanti alle coste della Sicilia Orientale", in Atti del III Convegno internazionale di Archeologia Sottomarina, 296–309. Bordighera.
- Kapitän, Gerhard. 1980. "Elementi architettonici per una basilica dal relitto navale del VI secolo di Marzamemi (Siracusa)", *CARB* 27: 71–136.
- Kautzsch, Rudolf. 1936. Kapitellstudien: Beiträge zu einer Geschichte des spätantiken Kapitells im Osten vom vierten bis ins siebente Jahrhundert. Berlin.
- Kennel, Stefanie A.H. 1994. "Hercules. Invisible Basilica (Cassiodorus, *Variae* I, 6)". *Latomus* 53: 159–175.
- Kingsley, Sean A 2004. *Shipwreck archaeology of the Holy Land: processes and parameters.* London.
- Kingsley, Sean A. 2009. "Great voyages, great Ocean-going ships?" In Byzantine Trade, 4th-12th Centuries: The Archaeology of Local, Regional and International Exchange, edited by Marlia Mundell Mango, 323–328. Oxford.

- Kozelj, Tony and Wurch-Kozelj, Manuela 1993. "Les transports dans l'Antiquité." In Archeologia delle attività estrattive e metallurgiche, V Ciclo di Lezioni sulla Ricerca Applicata in Archeologia, edited by Riccardo Francovich, 97–142. Firenze.
- Kozelj, Tony and Wurch-Kozelj, Manuela. 1999. "Les traces d'extraction à Thasos de l'antiquité à nos jours." In *Thasos: Matières premières et technologie de la préhistoire à nos jours*, edited by Caido Koukouli-Chrysanthaki, Arthur Muller and Stratis Papadopoulos, 49–53. Paris.
- Lemerle, Paul. 1979. Les plus anciens recueils des miracles de saint Démétrius et la pénétration des Slaves dans les Balkans, I. Le texte. Paris.

Lemerle, Paul. 1981. Les plus ancien recueils des miracles de Saint Démétrius et la pénétration des Slaves dans les Balkans, II. Commentaire. Paris.

Magoulias, Harry. 1976. "Trades and Crafts in the Sixth and Seventh Centuries as Viewed in the Lives of the Saints." *Byzantinoslavica* 37: 11–35.

Maischberger, Martin. 1997. Marmor in Rom. Wiesbaden.

- Makris, George. 2002. "Ships." In *The Economic History of Byzantium: From the Seventh through the Fifteenth Century*, edited by Angeliki E. Laiou, 91–100. Washington 2002.
- Marano, Yuri A. 2008. "Il commercio del marmo nell'Adriatico tardoantico (IV-VI secolo)." In Eredità culturali dell'Adriatico. Archeologia, storia, lingua e letteratura, edited by Silvana Collodo and Giovanni Luigi Fontana, 159–174. Roma.

Marsili, Giulia. 2019. Archeologia del cantiere protobizantino. Cave, maestranze e committenti attraverso i marchi dei marmorari (DISCI. Dipartimento Storia Culture Civiltà. Archeologia, 24). Bologna

- Marsili, Giulia. 2015. "Sigle di lavorazione e atelier marmorari: nuove riflessioni sul relitto di Marzamemi." In Isole e terraferma nel primo cristianesimo. Identità locale ed interscambi culturali, religiosi e produttivi, edited by Rossana Martorelli, Antonio Piras and Pier Giorgio Spanu, 369–376. Cagliari.
- Mascanzoni, Leardo. 1993. "Edilizia e urbanistica dopo il Mille: alcune linee di sviluppo." In *Storia di Ravenna* III. *Dal Mille alla fine della signoria polentana*, edited by Antonio Vasina, 395–445. Venezia.

Mazzotti, Mario. 1954. La basilica di Sant'Apollinare in Classe. Città del Vaticano.

- Mazzotti, Mario. 1986. "S. Apollinare in Classe: indagine e studi degli ultimi trent'anni." *Rivista di Archeologia Cristiana* 62: 189–219.
- Mauskopf Deliyannis, Deborah. 2010. Ravenna in Late Antiquity. Cambridge.
- Minguzzi, Simonetta. 1992. "Elementi di scultura tardoantica a Venezia: gli amboni di San Marco." Felix Ravenna 141–144: 7–94.
- Naumann, Rudolf and Belting, Hans. 1966. *Die Euphemia Kirche am Hippodrom zu Istanbul und ihre Fresken*. Berlin 1966.
- Novara, Paola. 1997. La cattedrale di Ravenna: storia e archeologia. Ravenna 1997.

Novara, Paola. 2011. "I capitelli a due zone." In *Le collezioni del Museo arcivescovile di Ravenna*, edited by Giovanni Gardini and Paola Novara, 99–100. Ravenna.

- Novara, Paola. 2016. "Ravenna. S. Pietro Maggiore (San Francesco). Gli scavi inediti e poco noti degli anni '20 e '70 del Novecento." In *Atti del VII Congresso nazionale di archeologia medievale*, edited by Paul Arthur and Marco Leo Imperiale, II, 148–152. Firenze.
- Paribeni, Andrea. 2013. "Modalità e prassi operative delle maestranze del Proconneso nei cantieri bizantini tra V e VI secolo." In *Episcopus, Civitas Territorium, Atti del XV Congresso Internazionale di Archeologia Cristiana*, edited by Olof Brandt, Silvia Cresci, Jorge Lòpez Quiroga and Carmelo Pappalardo, III, 1471–1480. Città del Vaticano.
- Paribeni, Andrea and Castagnino Berlinghieri, Elena F. 2015. "Produzione e commercio del marmo lungo le rotte del Mediterraneo: evidenze dai depositi e dai relitti navali delle coste italiane." In Isole e terraferma nel primo cristianesimo: identità locale ed interscambi culturali, religiosi

e produttivi, I, edited by Rossana Martorelli, Antonio Piras and Pier Giorgio Spanu, 395–402. Cagliari.

Pavan, Gino. 1978. "Restauri e ritrovamenti della Basilica di S.Apollinare in Classe." *CARB* 25: 233–264.

Penni Iacco, Emanuela. 2006. La basilica di S. Apollinare Nuovo attraverso i secoli. Bologna.

- Pensabene, Patrizio. 2002. "Inscribed architectural elements from the Prokonnesos in Durazzo, Tartous, Cilician Aphrodisias and Caesarea." In ASMOSIA 5, Interdisciplinary studies on ancient stone, edited by John J Hermann Jr., Norman Herz and Richard Newman, 328–334. London.
- Pensabene, Patrizio. 2004. "La diffusione del marmo lunense nelle province occidentali." In La decoración arquitectónica en las ciudades romanas de occidente, edited by Sebastián
 F. Ramallo Asensio, 421–466. Murcia.
- Pensabene, Patrizio. 2015. "Marmi pubblici e marmi privati. Note in margine ad un recente volume di Ben Russell." *Archeologia Classica* 66: 575–593.
- Pini, Antonio I. 1993. "L'economia "anomala" di Ravenna in un'età doppiamente di transizione (secc. XI-XIV)." In Storia di Ravenna, III. Dal mille alla fine della signoria Polentana, edited by Augusto Vasina, 509–554. Ravenna.
- Porta, Paola. 2007. "San Michele in Africisco a Ravenna: la scultura architettonico-decorativa." In *La diaspora dell'arcangelo: San Michele in Africisco e l'età giustinianea*, edited by Claudio Spadoni and Linda Kniffitz, 193–203. Cinisello Balsamo.
- Pralong, Annie. 1993. "Remarques sur les chapiteaux corinthiens tardifs en marbre de Proconnèse. In L'acanthe dans la sculpture monumentale de l'antiquité à la Renaissance, 133–146. Paris.
- Pralong 2000 A., "La typologie des chapiteaux corinthiens tardifs en marbre de Proconnèse et la production d'Alexandrie." *Revue Archéologique* 2000: 81–101.
- Pulak, Cemal, Ingram, Rebecca and Jones Michael L. 2014. "The Shipwrecks of Yenikapı and Their Contribution to the Study of Ship Construction." In *Stories from the Hidden Harbor:*

Shipwrecks of Yenikapı, edited by Zeynep Kızıltan and Gülbahar Baran Çelik, 22–34. Istanbul. Rautman, Marcus L. 2006. Daily Life in the Byzantine Empire. Westport/London.

- Ricci, Corrado. 1935. Monumenti: *tavole storiche dei mosaici di Ravenna*. Sant'Apollinare in Classe. Roma 1935.
- Rizzardi, Clementina. 2011. Il mosaico a Ravenna. Ideologia e arte. Bologna.

Russell, Ben. 2012. "Shipwrecks and stone cargoes: some observations. In *Asmosia 9, Interdisciplinary Studies on Ancient Stone*, edited by Anna Gutiérrez Garcia, Pilar Lapuente and Isabel Rodà, 533–539. Tarragona.

- Russell, Ben. 2013a. "Roman and Late Antique shipwrecks with stone cargoes: a new inventory." Journal of Roman Archaeology 26: 331–361.
- Russel, Ben. 2013b. The economics of the Roman stone trade. Oxford 2013.
- Russo, Eugenio. 1991. Sculture del complesso eufrasiano di Parenzo. Napoli 1991.
- Russo, Eugenio. 2010a. "Il rilievo costantinopolitano con Eracle e il cervo nel Museo Nazionale di Ravenna." *Ravenna studi e ricerche* 17: 15–26.
- Russo, Eugenio. 2010b. "La circolazione degli artefici e del marmo nel VI secolo." *Bizantinistica* 12: 31–55.
- Sodini, Jean Pierre. 1989. "Le commerce des marbres à l'époque protobyzantine.", In Hommes et richesses dans l'Empire byzantin, IVe-VII e siècle, edited by Vassiliki Kravari, Jaques Lefort and Cécile Morrisson, 163–186. Paris.
- Sodini, Jean-Pierre, Barsanti, Claudia and Guiglia Guidobaldi, Alessandra. 1998. "La sculpture architecturale en marbre au VIe siècle à Constantinople et dans les régions sous influence constantinopolitaine." In Acta XIII Congressus Internationalis Archaeologiae Christianae, 301–376. Città del Vaticano/Split.

Sodini, Jean-Pierre, Kolokotsas, Konstantinos. 1984. Aliki II. La basilique double. Athènes 1984.

- Sodini, Jean-Pierre, Lambraki, Anna and Koželj, Tony. 1980. Aliki I. Les carrières de marbre à l'époque paléochrétienne. Athènes 1980.
- Verhoeven, Mariette. 2011. The Early Christian Monuments of Ravenna. Transformations and Memory. Turnhout 2011.
- Vernia, Barbara. 2005. "L'arredo liturgico della basilica di sant'Apollinare Nuovo a Ravenna." In *Venezia e Bisanzio. Aspetti della cultura artistica bizantina da Ravenna a Venezia (V-XIV secolo)*, edited by Clementina Rizzardi, 363–389. Venezia.
- Volpe, Giuliano. 2007. "Architecture and Church Power in Late Antiquity: Canosa and San Giusto (Apulia)." In *Housing in late antiquity: from Palaces to Shop*, edited by Luke Lavan, Lale Özgenel and Alexander Sarantis, 131–168. Leiden-Boston.
- Volpe, Giuliano. 2009. "L'iniziativa vescovile nella trasformazione dei paesaggi urbani e rurali in Apulia: i casi di Canusium e di San Giusto." In *Ideologia e cultura artistica tra Adriatico e Mediterraneo orientale (IV-X secolo*), edited by Raffaella Farioli Campanati, Clementina Rizzardi, Paola Porta and Isabella Baldini Lippolis, 365–376. Bologna 2009.
- Wurch, Tony and Kozelj, Manuela. 1992 "The military protection of the quarries of the Aliki area during the Byzantine period.". In Ancient stones. Quarrying, trade and provenance, Interdisciplinary studies on stones and stone technology in Europe and Near East from the prehistoric to the Early Christian period, edited by Marc Waelkens, Norman Herz and Luc Moens, 43–57. Leuven.
- Zanotto, Rita. 2007. Vetusta servare. I reimpieghi di scultura architettonico-decorativa a Ravenna e nel ravennate tra tarda antichità e alto medioevo. Ravenna.
- Zollt, Thomas. 1994. Kapitellplastik Konstantinopels vom 4. bis 6. Jahrhundert n. Ch.: mit einem Beitrag zur Untersuchung des ionischen Kampferkapitells. Bonn.