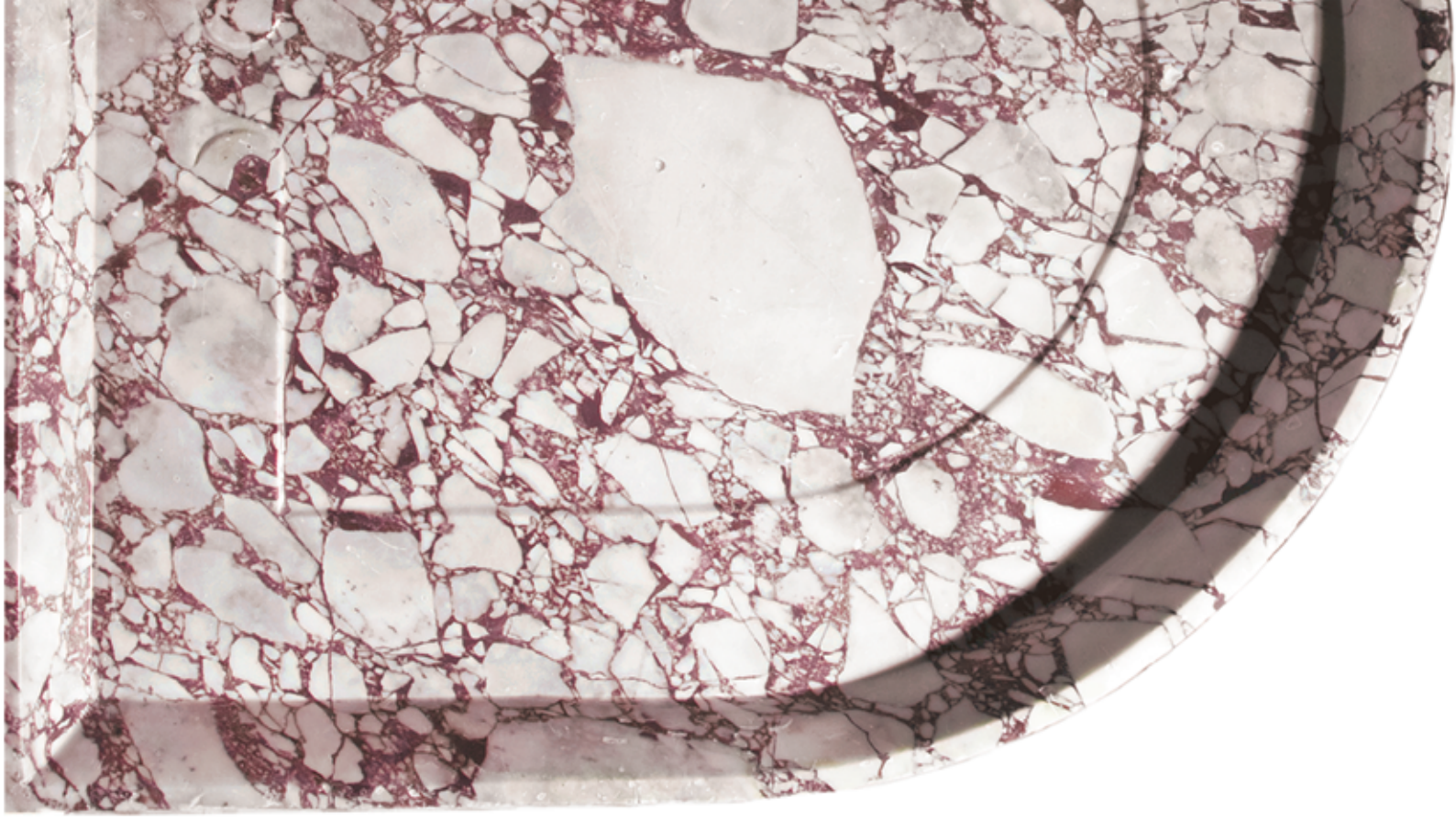
# Paul the Silentiary, Hagia Sophia, Onyx, Lydia, and Breccia Corallina

**Herrmann, John J.; van den Hoek, Annewies**



# ASMOSIA XI

## Interdisciplinary Studies on Ancient Stone

# PROCEEDINGS

## of the XI ASMOSIA Conference, Split 2015

Edited by Daniela Matetić Poljak and Katja Marasović

ARTS ACADEMY IN SPLIT

UNIVERSITY OF SPLIT,
FACULTY OF CIVIL ENGINEERING,
ARCHITECTURE AND GEODESY

# Interdisciplinary Studies on Ancient Stone

Proceedings of the XI ASMOSIA Conference (Split 2015)

Publishers:

ARTS ACADEMY IN SPLIT
UNIVERSITY OF SPLIT

and

UNIVERSITY OF SPLIT
FACULTY OF CIVIL ENGINEERING,
ARCHITECTURE AND GEODESY

Technical editor:
Kate Bošković

English language editor:
Graham McMaster

Computer pre-press:
Nikola Križanac

Cover design:
Mladen Čulić

Cover page:
*Sigma* shaped *mensa* of *pavonazzetto* marble from Diocletian's palace in Split

ISBN 978-953-6617-49-4 (Arts Academy in Split)
ISBN 978-953-6116-75-1 (Faculty of Civil Engineering, Architecture and Geodesy)

e-ISBN 978-953-6617-51-7 (Arts Academy in Split)
e-ISBN 978-953-6116-79-9 (Faculty of Civil Engineering, Architecture and Geodesy)

CIP available at the digital catalogue of the University Library in Split, no 170529005

Association for the Study of Marble & Other Stones in Antiquity

# ASMOSIA XI

## Interdisciplinary Studies of Ancient Stone

Proceedings of the Eleventh International Conference of ASMOSIA,
Split, 18–22 May 2015

Edited by
Daniela Matetić Poljak
Katja Marasović

Split, 2018

**Nota bene**
All papers are subjected to an international review.
The quality of the images relies on the quality of the originals provided by the authors.

# CONTENT

DOI: https://doi.org/10.31534/XI.asmosia.2015/02.19

# PAUL THE SILENTIARY, HAGIA SOPHIA, ONYX, LYDIA, AND BRECCIA CORALLINA

**John J. Herrmann[1] and Annewies van den Hoek[2]**
[1] Museum of Fine Arts, Boston, Massachusetts, United States (jherrmannjr@gmail.com)
[2] Harvard University, Cambridge, Massachusetts, United States (annewies_vandenhoek@harvard.edu)

**Abstract**

In 562 Paul the Silentiary described ten different types of colored stone on the walls of Hagia Sophia, Constantinople. Eight of them can be clearly identified optically, but two of them, "onyx" and "Lydian," are problematic. "Onyx" is puzzling because Paul gives no geographic origin for it, as he does for the others, but this can be explained by the use of alabaster/banded travertine from a variety of sources. The "pale yellow with swirling red" stone from Lydia listed by the Silentiary has not previously been identified in the building, but it can be recognized in a group of breccia panels on the main piers; the panels are rather similar to marble from sources that have recently been identified on the Karaburun peninsula near Izmir. Paul surely refers to this peninsula as the source of the Lydian stone; his term for the promontory corresponds perfectly to the shape of the peninsula.

*Keywords*
Egyptian alabaster, Hierapolis alabaster, *giallo antico*, Lydian marble, Karaburun peninsula

---

Scholars of ancient marble have frequently drawn on the poetic description of Hagia Sophia by Paul the Silentiary, composed on the occasion of the rededication of the great church of Constantinople in 562. Paul devotes a section of his text to the marbles used on the walls and pavement, giving their geographic associations and a brief visual description of them:

"Yet who, even in the thundering strains of Homer, shall sing the marble meadows gathered upon the mighty walls and spreading pavement of the lofty church? Mining (tools of) toothed steel have cut these from the green flanks of Carystus and have cleft the speckled Phrygian stone, sometimes rosy mixed with white, sometimes gleaming with purple and silver flowers. There is a wealth of porphyry stone too, besprinkled with little bright stars that had laden the river-boat on the broad Nile. You may see the bright green stone of Laconia and the glittering marble with wavy veins found in the deep gullies of the Iasian peaks, exhibiting slanting streaks of blood-red and livid white; the pale yellow with swirling red from the Lydian headland; the glittering crocus-like golden stone which the Libyan sun, warming it with its gold light, has produced on the steep flanks of the Moorish hills; that of glittering black upon which the Celtic crags, deep in ice, have poured here and there an abundance of milk; the pale onyx with glint of precious metals; and that which the land of Atrax yields, not from some upland glen, but from the level plain: in parts vivid green not unlike emerald, in others of a darker green, almost blue. It has spots resembling snow next to flashes of black so that in one stone various beauties mingle." (lines 617-646; transl. MANGO 1972).

Most of these stones can be clearly identified in the building. Nadine Schibille has conveniently discussed and listed the ten different types described by Paul, giving their ancient and modern names, and their applications in the church (SCHIBILLE 2014, 97-109, 241-243). Useful color illustrations are provided by Bente Kiilerich (KIILERICH 2012, Figs. 2-8). Six of the ten stones are not only unambiguously recognizable but also are used in great quantity: Carystan (*cipollino*) from Euboea, Phrygian (*pavonazzetto*) from Docimium, Asia Minor; porphyry (*porfido rosso*) from Egypt; Iasian (*rosso brecciato*/*cipollino rosso*) from Iasos, Caria; Celtic (*bianco e nero antico*) from the Pyrenees; and Atrax (*verde antico*) from Thessaly. Two types of stone are used less abundantly. Laconian (*serpentino*) from the Peloponnesus appears in relatively small quantities in intarsia panels mounted on the walls (Fig. 1). Mauretanian/Libyan (*giallo antico*) from Tunisia is used around an intarsia panel in the north side aisle and as broad framing bands in the narthex (KIILERICH 2012, Fig. 2) (Fig. 2). Generally the *giallo antico* is a more-or-less uniform pale yellow, but a more vivid variety with conspicuous red veins (*giallo antico brecciato*) was used in three panels in the nave on either side of the main door (Fig. 1). Another slab was reused in the pavement of the apse. The Silentiary does not call it by its familiar Latin name of Numidian marble (*marmor numidicum*); Byzantine writers of the time considered all Africa west of Egypt to be Libya, as is seen in Procopius, *Buildings*, VI.

More serious problems appear with two of Paul's stones, "onyx" and "Lydian". He does not mention

Fig. 1. Hagia Sophia, to left of main entrance in nave: above, "Mauretanian/Libyan" marble (*giallo antico brecciato*); below, intarsia panel of Laconian (*serpentino*) and Egyptian porphyry

Fig. 3. Hagia Sophia, nave piers, onyx band; at center and right, Egyptian alabaster; at left, white marble?

Fig. 2. Hagia Sophia, narthex, "Mauretanian/Libyan" marble (*giallo antico*) surrounding panels of "Celtic" marble (*bianco e nero antico*)

Fig. 4. Hagia Sophia, nave pier, *alabastro fiorito* (from Hierapolis?); above, Carystos marble (*cipollino*); below, Atrax marble (*verde antico*)

a geographical origin for "onyx", although this yellow-brown, white-banded travertine can be clearly identified in the building (Figs. 3-6). The onyx or alabaster may have multiple geographic origins, making a simple definition impossible. The stone has been called both Cappadocian (GNOLI 1988, 45, note 6, 220-221) and Egyptian (SCHIBILLE 2014, 103, 243). Either identification could be correct. The onyx in the building displays a great variety of color and pattern; it ranges from brown to reddish brown to orange to honey-colored to yellow to white, and it may display elaborate cloud-patterns, mild veining, or bland, uniform fields. Much of it is honey-colored with white bands and seems compatible with an Egyptian origin (Fig. 3) (KIILERICH 2012, Fig. 4; http://www.stonecontact.com/products-216005/aala-baster-onyx-slabs-tiles). Turkey itself has many quarries of alabaster/onyx/travertine. Those at Thyatira, Lydia (ÇOLAK, LAZZARINI 2002) and Hierapolis (BRUNO M., 2002) were demonstrably used in antiquity, but the surviving material there does not seem to match the Hagia Sophia onyx closely. The Silentiary speaks of the onyx of Hierapolis in his description of the ambo (pulpit) of Hagia Sophia, but he makes no mention of it in the building proper (PAUL SILENTIARY, Descr. Amb. 76-104: Gnoli 1988, 46-48). Some panels, however, seem to be the more reddish *alabastro fiorito* ascribed to Hierapolis/Pamukkale (Fig. 4); compare examples in the Corsi Collection at Oxford (slab 316) (http://www.oum.ox.ac.uk/corsi/stones/view/316). Some of the variety at Hagia Sophia could be due to 19th century repairs; the onyx friezes contain several slabs of whitish or yellow and white banded marble (rather than layered travertine), and at least one slab appears to be yellow and black *giallo di Siena* and thus probably from the 19th century restorations (Fig. 5). At least some of the pieces of alabaster used in sixth-century Hagia Sophia must have been second-hand since some onyx panels have moldings (Fig. 6), but most do not. The inclusion of multiple onyxes and reused stones may have contributed to the Silentiary's reticence about the origin of the onyx.

Fig. 5. Hagia Sophia, nave pier: left, *giallo di Siena* marble; right, onyx; below, Carystos marble (*cipollino*)

Fig. 6. Hagia Sophia, SW main pier, Atrax marble (*verde antico*) framed by panels of *alabastro fiorito* (from Hierapolis?) and reused panels with moldings

Fig. 7. Hagia Sophia, main pier, rosy breccia panel (Lydian marble?); surrounded by Atrax marble (*verde antico*) and Iasian marble (*cipollino rosso*)

Fig. 8. Hagia Sophia, main pier, rosy breccia panel (Lydian marble?) with Phrygian marble (*pavonazzetto*) patch

Fig. 9. Hagia Sophia, narthex gallery, bluish and reddish Phrygian marble (*pavonazzetto*)

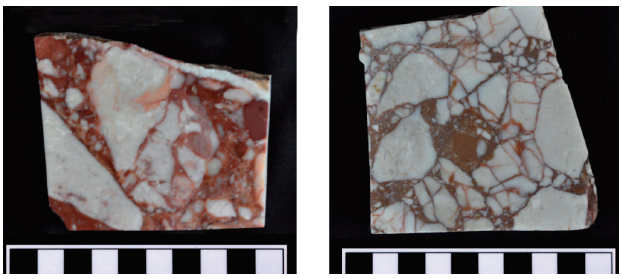


Fig. 10. Breccia corallina samples from recently identified ancient quarries in Lydia: left, Toprak Alınmış (Karaburun peninsula); right, Çakmakli (Manisa). From BRUNO *et al.* 2012, figs. 7-8

Only one of Paul's marbles, Lydian, cannot be readily identified in Hagia Sophia. From his description ("the color of pale yellow mixed with red"), it is generally accepted that the stone is *breccia corallina* (GNOLI 1988, 239; KIILERICH 2012, 10; BRUNO, BIANCHI, 2015, 62). This is a type of colorful marble that was widely used throughout the Mediterranean (AA, 64, Fig. 14; LAZZARINI 2009, 472, Fig. 12). The best-known source of the stone is at Vezirhan, Bithynia (LAZZARINI 2002). *Breccia corallina* from Vezirhan, however, does not seem


Fig. 11. Justinian's provinces. From JONES 1964, 1451, map 6


Fig. 12. Air view of the Karaburun peninsula. From Basarsoft; http://ercaninal.blogspot.com/2013/02/karaburun.html

to be present on the walls of Hagia Sophia. Lorenzo Lazzarini has identified it in a roundel (which is not currently visible) in the pavement (LAZZARINI 2002, 64, Fig. 14), but the roundel probably stemmed from a 14th century Cosmatesque-style addition. The stone, in fact, seems to be very rare in Constantinople in general. Lazzarini could identify only one other example, a column shaft in Hagia Irene (LAZZARINI 2002, 64, Fig. 14). Not only is *breccia corallina* from Vezirhan absent from the sixth-century structures of Hagia Sophia, but it also is unlikely that the stone ever had a significant presence there. The church's paneling is complete enough for it to be said that there is really no place for it. Much of the marble paneling of the outer walls of the side aisles has been replaced with painting, but it is hard to believe that the Silentiary would have put so much emphasis on a marble confined to this peripheral position. Furthermore, Vezirhan lies in Bythinia across the Bosporus from Constantinople (Fig. 11), and it is hard to believe Paul would have placed it in Lydia.

Since the other nine marbles the Silentiary describes have a significant presence on the walls of the church, it is very likely that Lydian marble is also present in Hagia Sophia and that it has simply been overlooked. It therefore seems legitimate to pick the most likely candidate for the "pale yellow mixed with red" from Lydia among the surviving marble panels of the church. A prime candidate is a group of breccia panels in the wainscoting of the main piers at ground level; these panels have faintly yellow clasts in a light pink or lilac-colored cement, and at first glance they appear to be a kind of *pavonazzetto* (Fig. 7). The yellowish tone of the clasts, however, emerges in comparison with the white clasts of the surrounding *verde antico*. These panels form a distinct group, being used on the sides of the main piers facing one another, and were not seen elsewhere. Although the panels resemble *pavonazzetto*, they are distinctly different from the Phrygian *pavonazzetto*, quarried at Afyon or the *pavonazzetto* of Aphrodisias (BRUNO *et al.* 2012, 564, fig. 2). The difference is particularly evident in places where these panels were repaired with Phrygian *pavonazzetto* (Fig. 8). The Silentiary speaks of different varieties of Phrygian marble in the church: "sometimes rosy mixed with white, sometimes gleaming with purple and silver flowers" (line 624), but distinctions between relatively red and relatively blue *pavonazzetto* can be seen elsewhere in the church among unmistakably Phrygian panels (Fig. 9, gallery narthex). The panels on the main piers stand apart for their rosier and yellower tones.

Recent exploration of Turkish quarries provides some further confirmation for the idea that this pale yellow and lilac breccia on the main piers of Hagia Sophia came from Lydia. Quarries of new varieties of *breccia corallina* have recently been found at Manisa in Lydia and at Toprak A*lınmış* on the Karaburun peninsula, on the seaward side of Lydia (BRUNO *et al.* 2012) (Fig. 10). Although published illustrations of these newly discovered breccias seem to show a somewhat redder matrix than the Hagia Sophia panels, the stones are otherwise very similar in appearance. The similarities are strong enough to leave open the possibility that the panels on the main piers of Hagia Sophia come from one of these two areas.

Of the two new areas, the Karaburun peninsula is by far the more likely source for the Hagia Sophia pier panels; the peninsula projects into the Aegean and fits perfectly the Silentiary's term of the "Lydian headland" (Λύδιος ἀγκών). A linguistic detail makes the reference clear: the word Paul uses for promontory, ὁ ἀγκών (ho

ankón), can mean either the bend of an arm or the headlands that form a bay. The metaphor of a bent arm corresponds well with the shape of the Karaburun peninsula as it appears on maps and in aerial views (Figs. 11, 12). The word also lies at the root of the name for the Italian city of Ancona, founded by Greek settlers from Syracuse in 387 BCE, with the name ἀγκών, which it was likewise given because of its promontory shaped like a bent arm.

The Silentiary's inclusion of the Karaburun peninsula in Lydia is somewhat puzzling since throughout the Roman Imperial and early Byzantine periods, Lydia was an inland province separated from the Aegean by the coastal province of Asia. This was true both in the Diocletianic reorganization of the provinces (DEMANDT 1998, 216) and in Justinianic times (JONES 1964, 1451, map 6) (Fig. 11). The coexistence of the provinces of Lydia and Asia is confirmed by a *novella* of Justinian in 535, which mentions the two together (MAIER no date, 2, 17). In referring to the "Lydian headland," Paul must be making a poetic and learned allusion to Lydia's control of the Aegean coast during the time of Croesus in the sixth century B.C. In a comparable way, he refers to the " Celtic crags" (Κελτὶς ἐρίπνη), which in his day belonged to the kingdom of the Franks or the Visigoths and whose days as Gallia Celtica lay back in the time of Julius Caesar. It therefore seems highly probable that the Hagia Sophia pier panels come from Toprak Alınmış or some unknown quarry on the Karaburun peninsula and can, in modern terms, be considered *breccia corallina.*

**BIBLIOGRAPHY**

BORGHINI G. 1989: Marmi antichi, Roma.

BRUNO M. 2002: "Alabaster quarries near Hierapolis (Turkey)", ASMOSIA VI, 19-24.

BRUNO M., ELÇI H., YAVUZ A. B., ATTANASIO D. 2012: "Unknown Ancient Marble Quarries of Western Asia Minor", ASMOSIA IX, 563.

BRUNO M., BIANCHI F. 2015: Marmi di Leptis Magna, Rome.

ÇOLAK M., LAZZARINI L. 2002: "Quarries and Characterization of a Hitherto Unknown Alabaster and Marble from Thyatira (Akhisar, Turkey)", in ASMOSIA VI, pp. 35-40.

DEMANDT A. 1998: Geschichte der Spätantike, Monachii.

GNOLI, R. 1971, 1988: Marmora romana, Roma.

JONES A. H. M. 1964: The Later Roman Empire 284-602, vol. 2, Oxford and Norman, OK.

KIILERICH B. 2012: "The Aesthetic Viewing of Marble in Byzantium: From Global Impression to Focal Attention", Arte medievale 2, 9-27.

LAZZARINI L. 2002: "The Origin and Characterization of breccia nuvolata, marmor Sagarium and marmor Triponticum", in ASMOSIA V, 58-67.

LAZZARINI L. 2009: "The distribution and re-use of the most important coloured marbles in the provinces of the Roman Empire", Y. MANIATIS (ed.): ASMOSIA VII, 459-484.

MAIER I., no date: NOV. VIII, UT IUDICES SINE QUO-QUO SUFFRAGIO FIANT (AD 535): http://droitromain.upmf-grenoble.fr/Corpus/Nov08.htm.

MANGO C. 1972: The Art of the Byzantine Empire 312-1453, Englewood Cliffs.

SCHIBILLE N. 2014: Hagia Sophia and the Byzantine Aesthetic Experience, Farnham and Burlington.