

# The Winged Victory of Samothrace - New Data on the Different Marbles Used for the Monument from the Sanctuary of the Great Gods

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# ASMOSIA XI

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# THE WINGED VICTORY OF SAMOTHRACE: NEW DATA ON THE DIFFERENT MARBLES USED FOR THE MONUMENT FROM THE SANCTUARY OF THE GREAT GODS

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## Abstract

The Winged Victory of Samothrace has long been recognized as a masterpiece of Hellenistic art. Composed of a base in gray marble and a statue in white marble, made of several blocks sculpted separately and assembled, it was entirely restored in 2013-2014. It had been previously thought that the monument might have been sculpted from Proconnesian or Pentelic marble, but laboratory analysis by Yannis Maniatis proved that a sample from a feather housed in the museum of Samothrace was Parian. During its conservation in 2013-14 and at the request of the Louvre, the different marbles constituting the monument were analyzed to confirm recent hypotheses and to get a more complete set of precise information. Fifteen samples were taken and complementary methods were used so that the different results could be compared and cross-checked: measurement of the MGS, analyses of the stable isotopes of the marble, petrography, and cathodoluminescence.

## Keywords

Paros marble, Hellenistic sculpture, Winged Victory of Samothrace

## Previous work

The monumental Winged Victory of Samothrace displayed on the Daru Staircase in the Louvre is composed of a base, a plinth made of six blocks and the anterior part of a warship, made of seventeen blocks, all in gray marble with pinkish-white veins, weighing twenty-seven tons, and a statue made from seven principal white marble blocks sculpted separately and then assembled, weighing almost two tons (Fig. 1). It was previously thought that the monument might have been sculpted from Proconnesian or Pentelic marble, but today it is generally agreed that the Winged Victory is in Parian marble and the boat that serves as its base is in marble from Lartos on Rhodes.

Before discussing the analyses carried out in 2013-14, during the conservation of the monument, it is useful to refer to previous studies and first to the very first although practically unknown study of 1951 when, at the initiative of Jean Charbonneaux, mineralogical tests were carried out by Madeleine Deudon at the Office de Documentation des Monuments Français at the Palais de Chaillot. The parts of the monument tested included fragments of the boat, its plinth, a feather from the Winged Victory (Fig. 2), and a fragment of the inscription considered at the time to be the artist's signature. In addition, Jean Charbonneaux also provided a sample from a fragment of the ship found in Samothrace, in the theater of the sanctuary, just below the Winged Victory's precinct, which he acquired in July 1950 when working with Karl Lehman, director of the American mission on the island. At that time Charbonneaux also discovered the right hand of the statue. The results of the tests were very limited: they revealed that the fragments of the boat conserved in Paris and Samothrace were sculpted from the same marble, as was the plinth of the boat and the inscription; the feather, however, was made of different marble. It is interesting to note that these results are exactly the same as those we were to obtain today from thin-section analysis, especially with regard to the particular structure of the Lartos marble crystals.

Other tests were subsequently carried out, all providing additional information. In 1997, at the request of Ira Mark, under the supervision of Professor Scott Pike, four fragments of the plinth of the statue discovered in 1983 at Samothrace and for a time associated with the Winged Victory were analyzed, and these results were compared with those of tests made on a fragment taken from a break in the lower block of the statue at the Louvre. The results demonstrated that the Samothrace fragments were not sculpted from the same type of marble as the Winged Victory and therefore did not form part of the statue. As for the Louvre fragment, the identification of the marble remained open; in the 1990s literature, it was thought to be either Asia Minor marble or Parian marble.



Fig. 1.  
Monument of the Winged Victory  
of Samothrace, circa 190-150 BC,  
Musée du Louvre

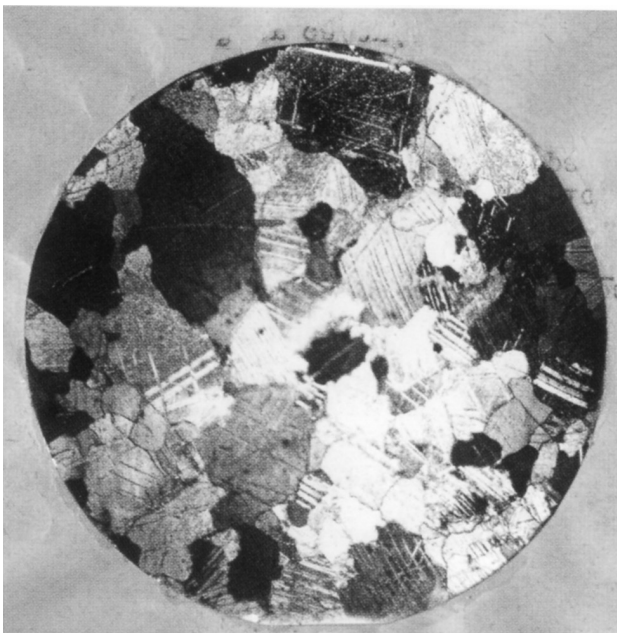


Fig. 2. Sample of marble from Paros examined by the Office de Documentation des Monuments Français, Palais de Chaillot, 1951

In 2008, on the initiative of Bonna Wescoat and Dimitris Matsas and under the direction of Professor Yanis Maniatis, conclusive multi-method laboratory analyses were carried out on fragments of the boat and on a feather that most probably belonged to the monument, all conserved in the Archaeological Museum of Samothrace. It was clearly established that the boat was made of Lartos marble and the feather of Parian marble from the Chorodaki-Lakkoi quarry<sup>1</sup>.

#### New studies

In 2013–14, at the request of the Louvre, Annie and Philippe Blanc again analyzed the marble constituting the monument. Samples were taken from the bottom of the attachment holes made during the nineteenth-century restorations, and from breaks in the marble; in this way, no fragments from the original surface of the work were

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1 MANIATIS, TAMBAKOPOULOS, DOTSIKA 2012, 263-278.



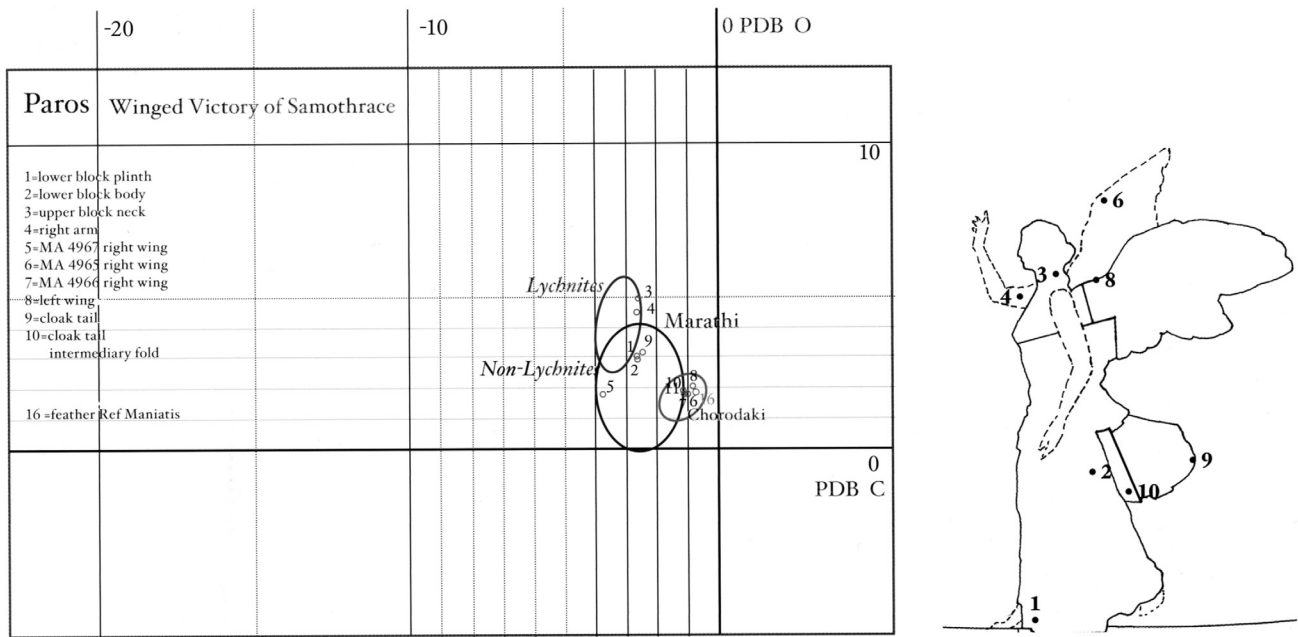


Fig. 3. Results of the isotopic analyses of the different marbles used for the Winged Victory and where the samples were taken from

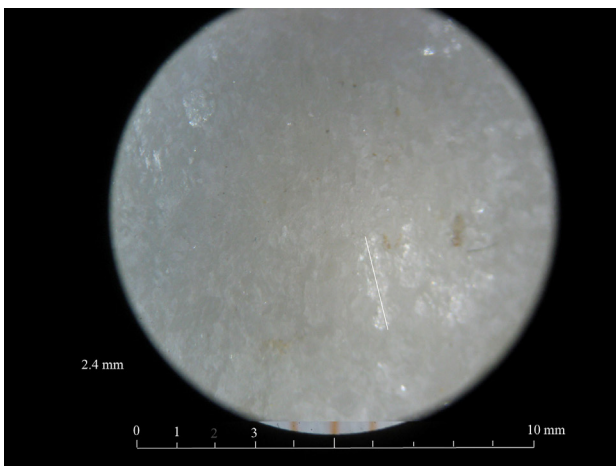


Fig. 4. Sample of Parian marble taken from the lower block of the Nike's body, MGS: 2, 4 mm

removed. It was decided to test a block from the pedestal of the base (S4, 5, and 6), a block from the boat (prow: C6), as well as all the blocks of the statue. Complementary methods were used so that the different results could be compared and cross-checked: measurement of maximum grain size (MGS), analyses of the stable isotopes of the marble<sup>2</sup>, petrography, and cathodoluminescence (Fig. 3 and 4).

The results confirmed that the boat and its plinth were both sculpted in Lartos marble from the island of

Rhodes. The statue on the other hand is entirely in Parian marble. An interesting fact that emerged from these results was that the blocks of the statue — the body, the wings, and the drapery — do not all seem to come from the same quarries on Paros. The right arm and the block constituting the upper part of the body (which originally included the upper torso and head) are all sculpted from the most beautiful marble to be found on the island, indeed the most beautiful marble in the Greek world: the famous Lychnites marble from the Grotto of the Nymphs and Pan or the Northern Nymphs quarries at Marathi. The large block forming the lower part of the body is in a Parian marble known as “non-Lychnites”<sup>3</sup>, a variety from different areas in the same quarries at Marathi<sup>4</sup>. The same marble was used for the rear part of the cloak and for the fragment from the lower part of the right wing. The left wing, two fragments of the upper part of right wing, and the intermediary fold between the body and the rear part of the cloak are in Parian marble from the quarries of Chorodaki-Lakkoi<sup>5</sup>.

It seems then that the artist used different types of Parian marble for the various parts of the statue, which were sculpted separately and then assembled. How can

2 GORGONI, LAZZARINI, PALLANTE 2002. See also ATTANASIO, BRILLI, OGLE 2006.

3 The lower block of the Nike's body is the larger one, 1.82 m high: two samples have been taken, from the lower and the upper part to double check for possible result variations and to make sure the determination of the Paros marble is accurate.

4 MANIATIS, POLYKRETI 2000.

5 SCHILARDI 2000.



Fig. 5. Two fragments of the left wing, Marathi “Non Lychnitès and Chorodaki-Lakkoi. The upper fragment has been carved separately

these differences be interpreted? It is important to remember that the work was painted, or at least part of it was. A blue band at the lower part of the himation, painted with Egyptian blue and invisible today has been revealed by infrared luminescence (visible-induced luminescence imaging), and traces of a pigment made partly of Egyptian blue were found on the wings, thanks to the collaboration of Sandrine Pagès Camagna (Centre de Recherche et de Restauration des Musées de France) and Giovanni Verri (Courtauld Institut, London)<sup>6</sup>. Originally, then, the difference between the Lychnites marble of the bust and the colder hue of the Lakkoi marble used for the wings was probably less obvious than one might at first suppose. Moreover, the quarries in question were not

a long way from each other. We should also emphasize that the differences between the two Parian marbles are quite small. Still, we can propose possible hypotheses: the artist used only the best—the most translucent—Parian marble, for the flesh of the Winged Victory on the upper torso, head, and right arm, and most probably for the left arm, which has not survived, whereas he would probably have considered the excellent “non-Lychnites” marble as of sufficiently high quality for the drapery.

The wings are mainly in Lakkoi marble. A fragment from the bottom of the right wing seems, however, to have been sculpted in “non-Lychnites” rather than Lakkoi marble. Was this wing made in two pieces (Fig. 5)? The lower part of one of the fragments from the upper part of the wing is smooth, as though it had been prepared to be attached to another piece; the observation might back up this working hypothesis. The feather from

6 See HAMIAUX, LAUGIER, MARTINEZ 2014, p. 97-99.

the Samothrace museum analyzed by Professor Maniatis is in Lakkoi marble. Prof. Bonna Wescoat has attributed it to the right wing, as the fragment's curved shape seems to suggest. The fact that the right wing is probably made of two types of Parian marble allows this proposition.

The rear part of the cloak is in Parian “non-Lychnites” marble, whereas the intermediary fold joining the cloak to the body of the statue is in Parian Lakkoi marble (Fig. 5). We should beware of over-interpreting this result: Lakkoi is used for other blocks of the statue. Here, the nature of the marble does not explain the changes and repairs made by the artist, or indeed any alteration made at a later date.

We could also comment on the fragment with a dedication or a signature: as Madeleine Deudon well observed in 1952, it seems to be made of Lartian marble, as is the base of the monument. Still, it doesn't join the base anywhere. Instead it ought to be considered a fragment of a small base for a statuette, as its scale and the remains of an insertion slot at the top clearly suggest.

### Conclusions

As a result of the 2013–14 restoration, the different kinds of marble used in the creation of the monument the Winged Victory of Samothrace seem to have been identified in their diversity, which makes it possible to cautiously formulate hypotheses about their use in the statue itself.

### BIBLIOGRAPHY

- ATTANASIO D., BRILLI M., OGLE N. 2006: The Isotopic Signature of Classical Marbles, *L'Erma di Bretschneider*.
- GORGONI C., LAZZARINI L., PALLANTE P., TURI B. 2002: “An updated and detailed mineropetrographic and C - O stable isotopic reference database for the main Mediterranean marbles used in antiquity”, in *ASMOSIA V*, 115-131.
- HAMIAUX M., LAUGIER L., MARTINEZ J.-L. 2014: The Winged Victory of Samothrace.
- MANIATIS Y., POLYKRETI K. 2000: “The characterisation and discrimination of Paria marble in the Aegean region”, in *Paria Lithos*, 575-584.
- MANIATIS Y., TAMBAKOPOULOS D., DOTSIKA E., WESCOAT B. D., MATSAS D. 2012: “The Sanctuary of the Great Gods on Samothrace, Greece: an extended marble provenance study”, in *ASMOSIA IX*, 263-278.
- SCHILARDI D. U. 2000: “Observations on the quarries of Spilies, Lakkoi and Thapsana on Paros”, in *Paria lithos*, 35-59.