

**A COMBINED ISOTOPIC, PETROGRAPHIC, AND
ARCHAEOLOGICAL PROVENANCE STUDY OF THE MARBLE
SOURCES FOR THE APOLLON TEMPLE OF DIDYMA, W-ANATOLIA.**

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When it comes to using scientific methods in archaeology, classicists tend to take one of two opposing positions. They either see scientific data as some magic and ultimate solution to all their problems, or they are deeply sceptical about any help from that side. Fatally, this last position is even supported by the scientists themselves who, in their turn, often accept as argument only what can be proven beyond doubt by scientific data alone.

The famous temple of Apollo at Didyma in western Turkey can prove as an excellent example for the successful application of a multimethod approach – including both scientific and historical arguments – for the determination of the provenance of white marbles and its usefulness to archaeology. The temple was begun ca. 300 BC and was still not finished when pagan cults were prohibited in AD 392. Inscriptions from the 2nd c. BC name the quarries around Lake Bafa (Bafa Gölü), 26 km NE of Didyma, as its marble source. Accordingly, archaeologists have taken the Bafa Gölü to be the only marble source for the temple.¹ However, recent isotopic and petrographic analyses of marble samples from both the temple (47 samples) and the quarry area (representative set of 58 samples) have shown that in fact there are at least three different marble sources: the Bafa Gölü area, the Aegean island of Thasos, and, most probably, the Proconnesos. Concerning the Bafa Gölü quarries, even different quarry areas, belonging partly to the ancient city of Miletus, owner of the sanctuary, and partly to that of Herakleia, can be discriminated by petrographic analysis, e.g. of the distinct style of deformation (brittle/ductile transition) of dolomitic and calcitic marbles. This has major inferences on the temple and its history:

¹ However, A. Peschlow-Bindokat and K. German, *Jahrbuch des Deutschen Archäologischen Instituts* 96, 1981, 212 have already noticed some foreign marble in the temple.

By determining the provenance of the different white marbles, we can prove that imported marble has been used from the beginning of the building activity. Marble from Thasos was used for the doorframe (but not for the sill which comes from the S-shore of Bafa Gölü) and for several column drums of the Dodekastylos and the inner front colonnade. Thus, Thasian marble was imported as a supplement, most probably to speed up the building progress. Proconnesian (?) marble was only used in the outer colonnades of the N-, E-, W- and perhaps S-sides, indicating that at some time in the imperial period local marble was supplemented (and, at a certain phase, even substituted) by cheaper and more easily workable marble from the imperial quarries in the sea of Marmara. For the inner N- and W-colonnade Bafa Gölü marble was used exclusively. Besides, we can confirm that in both the Hellenistic and the Imperial periods the local marble from Bafa Gölü was not only provided by the S-shore quarries which belonged to Miletus, owner of the temple as well, but also by the E-shore quarries whose marble must have been considerably more expensive both because it was of higher quality and because it belonged to an independent city. In addition to this information concerning the temple's economics and project planning, the mapping of the various marbles in the temple itself gives some important clues as to the different building phases during the long time of construction still debated amongst archaeologists. Provided that the use of (a) certain marble source(s) reflects a particular building phase, we can now determine more precisely which parts of the temple were built in one phase.