

## STONE ECONOMY OF ROMAN AMMAIA (PORTUGAL)

Taelman Devi<sup>(1)</sup>, Vermeulen Frank<sup>(2)</sup>, Deprez Sarah<sup>(3)</sup>, De Dapper Morgan<sup>(4)</sup>, De Paepe Paul<sup>(5)</sup>,  
Vandenabeele Peter<sup>(6)</sup>

- (1) Department of Archaeology and Ancient History of Europe, Ghent University, Blandijnberg 2, 9000 Gent, Belgium; [Devi.Taelman@UGent.be](mailto:Devi.Taelman@UGent.be)
- (2) CIDEHUS, Universidade de Évora, Palácio de Vimioso, Apartado 94, 7002-554 Évora, Portugal; [fvermeul@uevora.pt](mailto:fvermeul@uevora.pt)
- (3) Department of Geography, Ghent University, Krijgslaan 281 - S8, 9000 Gent, Belgium; [Sarah.Deprez@UGent.be](mailto:Sarah.Deprez@UGent.be)
- (4) Department of Geography, Ghent University, Krijgslaan 281 - S8, 9000 Gent, Belgium; [Morgan.DeDapper@UGent.be](mailto:Morgan.DeDapper@UGent.be)
- (5) Department of Geology and Soil Science, Ghent University, Krijgslaan 281 - S8, 9000 Gent, Belgium; [Paul.DePaepe@UGent.be](mailto:Paul.DePaepe@UGent.be)
- (6) Department of Archaeology and Ancient History of Europe, Ghent University, Blandijnberg 2, 9000 Gent, Belgium; [Peter.Vandenabeele@UGent.be](mailto:Peter.Vandenabeele@UGent.be)

### ABSTRACT

The Roman provincial town of *Ammaia* (*Lusitania*) is the subject of a large-scale archaeological research project that investigates the relationship and the interactions between the urban site and its surrounding landscape. One of the examined facets in the project discusses the stone use and the stone economy of the town. We aim to clarify the exploitation of the landscape around Ammaia in function of its building history, and to reveal important trade contacts and routes. The study of the Ammaian stone economy focuses on three main domains: natural stone as building material (sandstone, schist, quartzite, granite, *etc.*), natural stone for decorative use (marble), and (semi-)precious stones for the production of gems.

The first phase of the project involved the mapping of the stone use of the town, in order to draw conclusions concerning the start of an organized stone industry and economy. This revealed the use of granite as main building stone from Flavian times onwards. Simultaneously, marble was introduced in the townscape.

Samples of the granite were petrographically characterized and compared with results of analyses of samples from the vast granite zone north of the Roman town. In combination with a geoarchaeological survey of possible extraction sites, this allowed the identification of the town's main granite quarry. Clear traces of Roman quarrying activities were revealed after a detailed study of the site. Presently, the area is being fully mapped.

The second research topic concerns the marble of Ammaia. The marble artefacts are observed and characterized by a combination of petrographical and geochemical (ICP-MS, stable isotope analysis, *etc.*) methods. Furthermore, the large marble zone of the Estremoz anticline (located ca. 65 km south of Ammaia) will be thoroughly surveyed for traces of Roman exploitation.

A third element of the study comprises the identification of the gemstones found in Ammaia. Through X-ray diffraction (XRD) an identification of the mineral will be obtained. Further analysis will determine the provenance of the (semi-)precious stones.

1. Session: Poster Session I: Applications to Specific Archaeological Questions, Provenance Identification I and II, Advances in Provenance Techniques, Methodologies and Databases.
2. Poster Presentation.