Summarized ORViAMM Project

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Recent attention for water supply and production equipments in the archaeology of roman settlements led to developments on the frequency, typology and chronology of roman mills. On the basis of Prof. DPS Peacock's pioneer work and geochemical analyses, new attention has consequently been drawn to the Orvieto's type rock (leucitite) used for millstones and pompeian mills. The ORViAMM[1] archaeological research project, a new french-italian multidiscuplinary one, is intended :

- to identify quarries at Orvieto and surroundings, and to set up their relative chronology and dating through field walking, geological survey and excavation
- to localize and define the importance of the Orvietan millstone production for each period (especially the etruscan to the imperial one)
- to describe quarrying techniques and their possible evolution
- to establish a technological-based typology for the millstones manufactured and shaped in Orvieto, its evolution throughout time and the technical and social significance of such a development
- to contribute to a first knowledge of the working-force and the status of the quarries (private, imperial, farming contract etc.)
- to contribute to the comprehension of the outbreak and evolution of animal-driven or hydraulic mill, of the ways and intensity for their diffusion, and to replace the Orvietan centre among the whole Roman millstone production and mill technology
- to propose a local geography for the productive work-sequence (from quarries to conveyance to the Paglia and Tevere rivers), a special focus being on shaping areas and transporting paths. In this sense, remote Antiquity landscape and either anthropogenic or natural modifying processes will be accurately studied.

Such research aims call a range of trial digs and wider open excavations combined with LIDAR survey (detection and mapping of spoil heaps, of manufacturing areas, quarrying fronts, bottom conveying pathways for rough-out millstones, and of hydraulic regulation systems etc.) and a general topographical and laserscan mapping of lava fronts.

They also call a whole geological study (geometry of the leucite bearing lava-flow, quality and variability of leucitite, paleotopography of outcrops and their

[1] Orvieto Archeologia Macine Mulini / Orviéto Archélogie des Meules & Moulins

accessibility during Antiquity, extracted volumes, distinction between natural and anthropogenic split, calculation of global volume loss due to shapping) and a petrographical and geochemical characterization of the rock (with GPS or lasergrammetry located samples). A geomorphological investigation is also needed about slope and flood deposits, sedimentary coating over roman sites or levels, sedimentary evolution of potentially harbour areas near the Paglia river which waterway probably changed since Roman times. The ORViAMM project will also include a place-name survey. Creation of a GIS to integrate and manage the whole variety of located data appears basic and to be specially prepared for the LIDAR survey. A technological approach to the fabrication of the Orvieto millstone is being developp.

The ORViAMM project is provided with a website (http://www.orviamm.com/) and will include in Orvieto, lectures, an exhibition at the Museum, public visits to the excavations, activity towards schools, a collaboration with Universities (Nanterre, Perugia and possibly Siena) and training periods for students on the field and at in-doors work. If finances allow, an alternated seminary or workshop in archaeology will be organized between France and Italy. In addition to the annual report for the Umbria Soprintendancy, ORViAMM is intended to publish papers and a final monograph as well as to organize a symposium in Orvieto. ORViAMM will present a communication at the International Conference on Mills & Millstones in Almerìa (March 2014). The project is coordinated prof. Maurizio GUALTIERI (Perugia, poi Alberta, Ca.) and Alain Chartrain (Conservateur en chef du patrimoine, Paris-Montpellier) with a straight cooperation from Dott. Paolo BINACO (Perugia).