

amphorae (Carthage LR 1/ British B II/ Kuzmanov XIII/ Scorpan 8B/ Benghazi LR1/ Keay LIII/ Peacock, Williams class 44/ Oprüş II/ and Carthage LR4/ Almagro 54/ Kuzmanov XIV/ Peacock, Williams class 49/ Oprüş V), as well as a single West-Mediterranean *spatheion* amphora (Peacock, Williams class 51/ Benghazi LR Amphora 8/ Keay XXVI/ Scorpan VIII B/ Kuzmanov XIII/ Oprüş I), to which a table amphora can be added (Opaıt I / Kuzmanov XIX / Oprüş II). All of them are dated to the 5th-6th centuries.

A WEB-BASED INFORMATION SYSTEM OF POTTERY FABRICS IN THE CENTRAL MEDITERRANEAN (FACEM)

Verena GASSNER

Kurt SCHALLER

Archaeological objectives of the project

The identification of the provenance of ancient pottery represents one of the main topics of actual pottery research in archaeology as the place of origin of a certain object can be used as an indicator for cultural contacts, economic exchange, or change in political power, to mention only a few. Whereas for some classes the origin of an object can easily be determined by decoration or by potters' stamps, these possibilities lack for common wares and most classes of amphorae, but also for undecorated or simply decorated table wares. In the last ten to fifteen years adequate instruments to face this problem have been developed both on theoretical and practical levels, resulting in a classification of pottery according to its fabric¹. These collections of fabrics, however, remain normally restricted to the respective teams of excavations or museums, each of them creating a system of their own. Exchange of expertise between colleagues or correlation of the various systems remained therefore until now restricted to an informal level depending mostly on personal contacts.

The project Facem = **F**abrics of the **C**entral **M**editerranean intends to create a coherent system of fabrics for the Central Mediterranean, based on production sites that have been identified by archaeometric analyses, comparing samples either with pottery of secured provenance (e.g. potters' stamps or decoration² or wasters of pottery workshops³) or by comparison with raw materials. The current basis for that project is given by a large database at the Institute of Classical

¹ For the definition of „fabric“ see ORTON, TYERS, VINCE 1993, 67 ff. 132 ff.; PEACOCK 1977, p. 21 - 34; for the possibilities of description see GASSNER 2003, p. 25-34 with bibliography.

² A good example for this is the classification of fabrics of Western sigillata, cf. DONAT & RADBAUER 1999, p. 208-209; GASSNER & RADBAUER 2003, p. 41-75; RADBAUER, *Provenienzstudien zu reliefverzierter und glatter Terra Sigillata im mittleren Donauraum* (in Vorbereitung).

³ E. g. GASSNER, GRECO, SAUER 2003, p. 199-205 or LADSTÄTTER & SAUER 2002, p. 323-333.

Archaeology in Vienna (Austria), compiled together with the Dipartimento di discipline storiche Ettore Lepore, Università Federico II, Napoli (Italy)⁴. At the moment, this collection comprises about 950 samples of more than 30 production sites in the area of the Central Mediterranean. It is enlarged by a consistent group of samples of Punic pottery from Carthage and from Punic Sicily, made accessible by the Vakgroep Archeologie & Oude Geschiedenis van Europa of the University of Gent (Belgium)⁵. The general date range is given by the 6th – 2nd c. BC, but expands to the time of the Roman Emperors in the case of terra sigillata (Italian and African). It is to be hoped that the geographic extension of the project can be enlarged to the western and eastern regions of the Mediterranean, including hopefully also the Black Sea region in the future.

This enormous mass of data will be made public by a web-based database corresponding to the demands of open access policy. A database-powered information and data administration system via the internet was chosen as adequate instrument of publication to avoid problems normally connected with the publication of large collections of data in conventional print-form. In contrast, the database proposed in this project is supposed to grow continually as we hope that the already existing collection of samples will be complemented by fabrics defined on other (production-) sites by colleagues, thus creating a powerful tool for identifying regions of origin of pottery and getting insight into the ways of cultural and economic exchange in the Central Mediterranean area.

The technical framework of the Facem information system

The system, an expert tool for specialists in the field of archaeology and archaeometry, is currently being developed in co-operation between the Universities of Vienna and Salzburg. It aims at the administration and visualization of large amounts of data comprising text information, technical analysis data and images from microscopy. Interactive distribution maps showing the locations of the presumable provenience of the fabrics (as defined above) and/or the find spots of the pottery samples are created on the fly to support the specialists in their interpretations.

The web application is based on an open source LAMP (Linux-Apache-MySQL-PHP) environment including AJAX components for client side scripting. The maps required for the project are produced on basis of NASA-SRTM data. The system can be operated platform independently via every contemporary web browser, usability includes omittance of plug-ins, CSS based interfaces and stringent user guidance to provide a possibly flat learning curve. Alternatively to the web based access the administrator of the system can produce fully functional local stand-alone clones of the database for work in environments where there is

⁴ The Austrian team is directed by Verena Gassner with the collaboration of Maria Trapichler (Greek pottery) and Silvia Radbauer (Terra Sigillata): The Italian team of the project is directed by Giovanna Greco and enjoyed the help of many Soprintendenze archeologiche in the region of Magna Graecia.

⁵ The Belgian group is directed by Roald Docter with the collaboration of Babette Bechtold.

no internet available, e.g. for archaeologists who are working in the field in more or less remote areas.

The data model (= the organization of the information) is optimized for the identification and the comparison of ceramic fabrics. For the latter a dynamic image comparison tool is being developed, that allows external users to create virtual personal workspaces, load up own sets of images and compare their own photos with the ones provided by the database online on the same screen.

Future development potentials arise in the field of automated image comparison with specialized computer algorithms for image analysis as well as in the field of machine-aided color matching as a basis for reliable comparison of images deriving from different sources using different calibrations or color settings.