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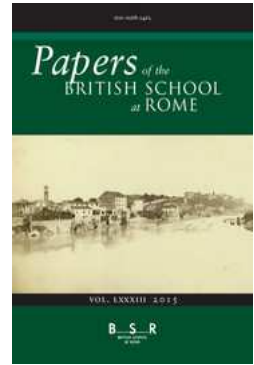
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## RESEARCH AT VAGNARI (COMUNE DI GRAVINA IN PUGLIA, PROVINCIA DI BARI, REGIONE PUGLIA)

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## RESEARCH AT VAGNARI (COMUNE DI GRAVINA IN PUGLIA, PROVINCIA DI BARI, REGIONE PUGLIA)

doi: 10.1017/S0068246215000306

### A STUDY OF LEAD AND LEAD-PROCESSING IN THE *VICUS* OF THE ROMAN IMPERIAL ESTATE AT VAGNARI (*Maureen Carroll*)

In 2012 and 2013, the University of Sheffield conducted archaeological excavations in the settlement (*vicus*) of the Roman imperial estate at Vagnari to seek evidence for industrial and agricultural production and to investigate the exploitation of human and natural resources (Carroll, 2013; Carroll, 2014; Carroll and Prowse, 2014). We established that lead-working was one of the specialist crafts conducted in the settlement, but due to time limitations at the end of both excavation seasons, no detailed study of the lead artefacts could be conducted. This situation was remedied during a study season in July 2014, when all lead objects from the *vicus* excavation were photographed, drawn and catalogued. In addition, unstudied lead artefacts retrieved during the field-walking surveys of Carola Small and Alastair Small at Vagnari in 2000 and 2001 were studied in the same manner. Ninety-nine objects with a total weight of 1,700 g were assessed. The assemblage comprises a variety of objects, ranging from the contents of a crucible, pieces of sheet lead cut into small squares and rectangles, net weights, lead weights, lead droplets from smelting, and lead scrap for recycling (Fig. 1). Excavations in the *vicus* in 2015 may furnish more lead objects, as well as evidence for smelting hearths and crucibles.

The study of the lead from Vagnari is a pivotal step in preparation for a planned collaborative project with Tracy Prowse (McMaster University), whose ongoing investigation of the necropolis at Vagnari has furnished evidence for over a hundred Roman burials. An analysis of lead composition and isotopic signatures will be conducted to determine the origins of the ores and to understand the implications of



Fig. 1. Lead weight in the form of a shell from the *vicus* at Vagnari.  
(Photo: Maureen Carroll.)

the movement of natural resources necessary for lead-working at Vagnari. The inhabitants of the *vicus* working with lead, and many of those around them, were clearly living in a toxic environment, and our artefactual and skeletal research will promote a significantly better understanding of the health status, and health risks, of a Roman rural population in the environment in which they lived, worked and died.

## RESEARCH ON THE VAGNARI NECROPOLIS 2014 (*Tracy Prowse*)

Research in the Vagnari necropolis since 2002 has revealed the presence of burials dating between the first and fourth centuries AD, with the majority dating to the second and third centuries AD. Apart from three cremations, the burials are inhumations in ‘a cappuccina’ tombs, containing modest grave-goods deposited with the deceased. None of the tombs have been found with surviving inscriptions, so bioanthropological research on the human remains is attempting to discover who these people were, where they came from, and the quality of life at Vagnari.

The summer of 2014 was a study season for researchers working on the Vagnari Bioarchaeological Research Project. David Griffiths (University of Leicester) and Richard Hobbs (The British Museum) completed the analysis of the ceramic and small finds excavated from the necropolis over the past three field seasons. All of the recently-excavated skeletal material from the cemetery was cleaned and inventoried, and basic demographic information was collected. There is now a total of 108 skeletons in the Vagnari skeletal sample (Carroll and Prowse, 2014; Prowse, Nause and Ledger, 2014).

A team of graduate students collected data from the skeletons on vitamin D deficiency, as part of the Social Sciences and Humanities Research Council-sponsored project entitled ‘Social-cultural determinants of community health in the western Roman Empire’. The Vagnari sample is one of the Roman period collections from Italy that will be used for a comparative analysis of Vitamin D deficiency in the Roman world. Rebecca Gilmour (PhD candidate, McMaster University) collected morphological and radiographic data on bone fractures in the Vagnari sample to explore the long-term functional consequences of fractures in antiquity. Matthew Emery (PhD candidate, McMaster University) collected tooth samples for his isotopic and ancient DNA research on migration and the genetic origins of the people buried in the Vagnari necropolis. Finally, my own research in 2014 focused on collecting dental pathology data and bone samples (for isotopic analysis) to investigate diet and dental health in the Vagnari skeletal sample. Tooth samples were also collected for the planned collaborative research project with Maureen Carroll on the lead production and health consequences of lead exposure on this Imperial estate.

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