

# **MORE THAN JUST NUMBERS?**

## **THE ROLE OF SCIENCE IN ROMAN ARCHAEOLOGY**

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## Preface

If you would plant for days, plant flowers.  
If you would plant for years, plant trees.  
If you would plant for eternity, plant ideas.  
(*Oriental proverb*)

This book developed out of a session organised by the editor at the Ninth Roman Archaeology Conference held at the University of Oxford in March 2010. The aim of the session, entitled “More than just numbers? Science, Archaeology and the Romans”, was to highlight the contribution science can make to Roman archaeology in particular. Although much scientific research on Roman material has been carried out in the past, and still continues, the results do not always receive the broad attention they deserve and are not as accessible to the non-scientist archaeological community as they could be.

Unlike most periods of prehistory, the Roman period offers a wealth of archaeological evidence for investigation, and it brings the additional benefit of written sources. Thus it is easy for Romanists to underestimate the new information that can be obtained from using scientific methods to complement traditional archaeological research. Scientific dating is a case in point (see the chapter below by Pollard), but so too is studying technological processes at industrial sites or analysing human remains to investigate issues of ethnicity, health and diet. Some applications, such as geophysical prospection or the analysis of plant and faunal remains, are now integral parts of most archaeological projects, and recent years have seen an increased output in fields such as bio-archaeology, while material culture is now less frequently the subject of scientific investigations. The application of scientific methods can take many forms, and their potential to answer research questions becomes obvious when those questions cannot be answered by archaeology alone.

A greater effort is required to make scientific investigations an integral part of Roman research projects. We may ask to what extent is scientific research carried out in isolation, separate from, rather than integrated into, wider archaeological frameworks? Why are scientific data sometimes relegated to appendices in fieldwork publications and insufficiently interpreted for the non-scientist reader? Indeed, do most Romanists understand ‘science’? Breaking through the communication barrier to engage with scientific methods is essential if we are to see the value of archaeological science in Roman archaeology and exploit its full potential. This can happen only if scientists and classicists start talking — and this was the chief goal of the conference session. The ensuing publication further works towards the goal of stimulating an intellectual debate between science-based and humanities-based archaeologists who have a particular focus on the Roman world. It unites the majority of papers presented in the session (M. Groot, M. Pollard, M. Ponting, I. Schrüfer-Kolb, R. Veal) with two science-focussed papers (A. Sperduti *et al.*; P. White *et al.*) that were presented in other sessions at the same conference.<sup>1</sup> The scope of the book is further broadened by two papers specifically commissioned for the purpose (L. Cramp *et al.*; R. Fillery-Travis).

The case studies cover the geographical extent of the empire from Britain (Cramp *et al.*, Fillery-Travis, White *et al.*) and the Netherlands (Groot) to Syria-Palestine (Ponting),

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<sup>1</sup> Two more papers given at the same conference and having a focus on isotopic analysis have already been published in JRA Supplement 78: H. Eckardt (ed.), *Roman diasporas: archaeological approaches to mobility and diversity in the Roman Empire* (2010).

as well as the heartland of Italy (Sperduti *et al.*; Veal). The time period covered is similarly wide, from Republican times to the mid- to late Empire and beyond. All the studies reflect ongoing or recently completed research, while M. Pollard provides a historical overview of archaeological science as applied to Roman research. The introduction (Schrüfer-Kolb), which provides the theoretical framework for the book, is based on the Rede lecture by C. P. Snow in 1959. That lecture highlighted the increasing gap between science and the humanities, the “two cultures”. The lecture received renewed attention in 2009 (the fiftieth anniversary of the event), while the year of our conference marked not only the Roman Society’s centenary but also the thirtieth anniversary of Snow’s death. The “two cultures” debate is more relevant than ever in light of the current British education system and recent increased efforts to foster public engagement with science.

While the papers cover a wide range of scientific techniques, they can only be a selection of work currently being done in the field of archaeological science. The papers share not only the theme of scientific methods applied to Roman archaeology in particular, but also the fact that in each case their application answers research questions that traditional archaeology by itself could not. The common thread is thus a methodological rather than a thematic one. Cramp *et al.*, Groot, Sperduti *et al.*, and Veal all deal with the study of organic remains (food, animal bones, human remains, and charcoal, respectively) whereas Fillery-Travis, Ponting, and White *et al.* engage in the analysis of inorganic material (metal and stone, respectively), and recent advances in isotopic chemistry and radiocarbon dating as applied to the Roman period are discussed by Pollard. Two overviews, one from a scientific point of view (Pollard), the other by a Romanist (Schrüfer-Kolb), debate the contribution of archaeological science to Roman archaeology from two different angles.

From the selection of papers it becomes clear that truly inter-disciplinary (and not just multi-disciplinary) research in Roman archaeology remains as important as ever. The contributions also demonstrate that there is a continuing need for ‘translators’ between science-based and humanities-based areas of archaeological research.

Irene Schrüfer-Kolb

The book is dedicated to the memory of Ingo Keesmann, professor of geosciences at the University of Mainz, who first encouraged my interest in science-based archaeology (or should that be archaeological science?).

## INTRODUCTION

# Rome was not built in a day: C. P. Snow and the significance of his Rede lecture today

Irene Schrüfer-Kolb

In his introduction to a new booklet *Past, present and future*, launched in the House of Commons in June 2010, Sir Adam Roberts, President of the British Academy, drew attention to the fact that research in the humanities and social sciences “involve[s], as so often, vital interdisciplinary research spanning the natural and social sciences”. He stressed that<sup>1</sup>

As modern research has become more and more interdisciplinary, and we move increasingly beyond the sterile and outdated notion of a society of ‘two cultures’, the mutual dependencies of ‘hard science’ and the humanities and social sciences have become ever clearer.

This is no doubt true and to be welcomed, but a closer look inside the humanities and social sciences suggests that not all subject areas are integrating ‘hard science’ equally well. Similarly, despite recent increased efforts to foster public engagement with science, it would seem that there are still areas within the natural sciences that could communicate to non-specialists the implications of the research in a more accessible manner.

This chapter will discuss aspects of educational policy, focussing on the situation in the United Kingdom, although many issues can easily be transferred to systems in other Western countries.

### The ‘two cultures’ debate

The two cultures that Sir Adam Roberts refers to are the debate that began more than 50 years ago when, on 7 May, 1959, C. P. Snow, the well-known scientist and novelist, delivered the annual public Rede lecture in the Senate House of the University of Cambridge. Charles Percy Snow (or Baron Snow as he later became known) was born in 1905 in Leicester to lower middle class parents. He read chemistry and physics at Leicester University College, won a scholarship to study for a doctorate at Cambridge, and became a research scientist in the Cavendish laboratory. After suffering a setback in research, he began to publish two novels, the beginnings of his writing career. With the outbreak of the Second World War he was drafted into the Civil Service to recruit physical scientists for the war effort. After the war he decided to remain in the Civil Service until 1959 and to pursue his writing career. His novels were extremely successful and caused him to become a public figure. He was most influential in the 1960s, when he became government spokesman on technology in the House of Lords and took a senior position at the Ministry of Technology. After resigning in 1966, he continued as a writer and lecturer, travelling the world to comment on social issues. He died in London in 1980.<sup>2</sup>

In his lecture at Cambridge, Snow criticized the lack of understanding and communication between natural scientists and “literary intellectuals” — the two cultures, as he called them — and how this affected not just academic research but society at large. This discussion

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<sup>1</sup> The British Academy 2010, 5.

<sup>2</sup> Collini in Snow 1998, xvii-xxii.