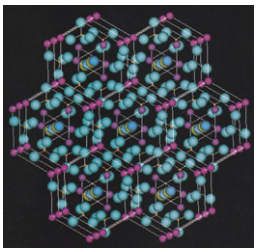
points aspects of the Great Picture. Lynn Hulse writes about Lady Anne and music, Heidi Brayman Hackel considers Lady Anne as a book collector and annotator, while Stephen Orgel's complementary paper examines her annotations in one of her books, a copy of the 1610 edition of the Elizabethan classic, *A Mirovr for Magistrates*.

The chapter which, along with Goodall's contribution, provides the high point of a generally good collection is Katherine Acheson's rather misleadingly titled 'Lady Anne Clifford's Writing Style'. Firmly grounded in (beautifully expounded) literary theory, this culminates in a discussion of the inscriptions in the Great Picture, which she relates to the emblem tradition, but chooses to designate 'complementary text', a coinage which is helpful both here and when extended to other contemporary forms which combine visual and textual elements, such as funerary monuments. This is also the paper which brings out most clearly the attractiveness and fascination of Lady Anne, which make her such a delightful subject: Acheson avoids the common trap of theorists: a lack of appreciation that the object of theory is also a person. The cross-disciplinary approach of the book is welcome: the Yorkshire Archaeological Society is to be congratulated on including it in its Occasional Papers series. A more stringent editorial approach would have reduced repetition of the facts of Lady Anne's life; reproduction of the illustrations is sometimes poor, most disappointingly in the case of the Great Picture, which is muddy and at a small scale. That said, this is a valuable addition to scholarship on Lady Anne Clifford: Goodall's and Acheson's studies will also be fascinating and stimulating to all who study early modern material culture.

JEAN WILSON
Department of English, Boston University, USA and Harlton, Cambridge, UK (Email: jlw29@cam.ac.uk)

STEPHEN WEINER. *Microarchaeology: beyond the visible archaeological record*. xviii+396 pages, 95 illustrations, 4 colour plates, 13 tables. 2010. Cambridge: Cambridge University Press; 978–0–521–8803–9 hardback £55 & $95; 978–0–521–70584–4 paperback £24.99 & $36.99.

Steve Weiner's years of experience studying minerals in the archaeological record are summed up in this book under the novel rubric of *microarchaeology* — the study of the archaeological record, not just through microscopes, but chemically, biochemically and (especially) mineralogically.



Most of this well-illustrated book is suitable as a text for students who have taken at least a first course in archaeological science. Chapter 2 gives a general overview of the range of microarchaeology and chapters 4–10 give more detail, with a distinct emphasis on areas that have featured in Weiner's own research. Each chapter opens with a review of basic concepts, and then each material is described, its occurrence and diagenesis on archaeological sites are discussed, and the information about the past that is embedded in it is outlined. In this way a great deal of excellent, well-structured information is conveyed about the mineral components of the archaeological record (chapter 4), bones and teeth (chapter 5), phytoliths, diatoms, eggshells, otoliths and mollusc shells (chapter 6). Weiner's detailed understanding of the formation and composition of biominerals shows in the discussion of their occurrence and their potential to yield archaeological information. The structure works well as a didactic framework, but leads to repetition; for example, there are at least three places where the formation of limescale in kettles is described as leading to aragonite not calcite. The archaeological examples given are primarily from subtropical and tropical climates, and I wonder to what extent the techniques and results are transferrable to cooler and wetter climates.

Chapter 7 moves from minerals to pyrotechnological processes, covering wood ash, charcoal, plaster and mortar, and ceramics. Drawing on Weiner's own publications, there is a particularly useful section on a conceptual framework for the diagenesis of the products of fire; the section on ceramics, on the other hand, is short given the extent of previous microscopic and chemical study of pottery, and metals and glass are excluded. Chapter 8 on biomolecules is structured around the idea that biomolecules survive in protected niches where microorganisms cannot attack them. For me, this chapter was less successful because the content is heavily dependent on review articles, some of them relatively old, such as 1993 for lipid residues in pottery and 2001 for ancient DNA. Chapter 10 applies the ideas of earlier chapters to assessing the quality of radiocarbon dates, but completely omits reference to the four decades of literature on this topic that has appeared in this journal and elsewhere.

The final chapters are practical accounts of operating an on-site laboratory and '*an in-depth overview of the use of infrared spectroscopy for analysing the microscopic record*' (to quote the back cover). These chapters will be very useful to practitioners, but they are at an entirely different level to the rest of the book.

Other parts of the book are more of a manifesto, calling for change in the way we investigate and conceive the archaeological record to take greater account of microarchaeology. Chapter 1 argues that archaeology is based on the interpretation of observations, and consequently we are missing a lot if we omit microarchaeological observations. Hence the next generation of archaeologists must be conversant with all aspects of the archaeological record, including microarchaeology, and able to interpret it with its ambiguities. Chapter 3 assesses the (in)completeness of the record, showing that mineralogical stability can be used to differentiate materials lost from those never present on a site. After considering each material, chapter 9 returns to this idea with ethnoarchaeological studies incorporating microarchaeology, and thought-experiments (or *Gedankenexperimente*) about the microarchaeological record generated in an Eskimo winter house and a Zagrosian village. These are thought-provoking discussions of information usually considered lost to archaeological investigation, but potentially accessible via microarchaeology. For example, might it be possible to distinguish between wood and dung as fuel using burnt phytoliths?

Overall I found this book both rewarding and frustrating. The conceptual frameworks for microarchaeology are admirable and form an agenda for future research. However, the repetitions, sometimes only two pages apart, could have been eliminated, and Appendix B (a list of infra-red spectra downloadable from the author's website) is unnecessary. The main text concludes with a discussion of the infra-red spectrum of nitrate salts, whereas the book really needs an epilogue to draw together all its arguments in favour of microarchaeology. Despite its limitations, this book will find a place on my reading lists and the final chapter will ensure that a copy is kept next to our infra-red spectrometer. It is also a book to return to in future for stimulating ideas on microarchaeological research.

Andrew R. Millard
Department of Archaeology, Durham University, UK, (Email: a.r.millard@durham.ac.uk)

Robert M. Carter. *Climate: the counter consensus*. 315 pages, 34 illustrations. 2010. London: Stacey International; 978–1–906768–29–4 paperback £9.99.

Robert Carter's book should be read as a stimulating account about how science is undertaken and disseminated. Don't be put off by the prefatory essay by Tom Stacey in which he suggests '*the science of anthropogenic global warming [. . .] has been fertilized at its inception by the Green-ish, New Age-ish miasma of the Sixties, and its aura of ideological anarchism*' (p. 13). Don't be put off by Carter's periodic lapse into hyperbole (e.g. suggesting the public debate on climate change is driven '*by strong environmental lobby groups and evangelistic scientists and journalists*' (p. 21). Don't be put off by his apparent inconsistency (e.g. noting that scientific consensus is an oxymoron (p. 25) when the term appears in the title of his book and in chapter 9). Carter is a scientist frustrated by the silliness of many aspects of the climate change debate. He refers, for example, to a website that lists the many things attributed to climate change which '*starts with acne, progresses through circumcision in decline, haggis threatened, polar bears deaf, seals mating more, short-nosed dogs endangered, and finishes with yellow fever*' (p. 130).

Carter is a passionate 'old school' scientist; he is not a climate change 'denier'. His view is entirely sensible given current knowledge: '*It is certain that natural climate change will continue in the future as it has in the past . . . In the face of this, it is clearly most prudent to adopt a climate policy of preparation for, and adaptation to, climate change . . . Once in place, these same plans will provide an adequate response to any human-caused change should it emerge in measurable quantity at some future date*' (p. 217).

The key points of this book appear in Carter's preface. There is a science reality in which climate can be seen as a complex, dynamic natural system that no one can wholly comprehend. Computer-generated models have different outcomes depending on the parameters used. Competent scientists from all groups accept that global climate has always changed and always will. Human activities definitely affect local climate and summed may affect global climate