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## Thin-Section Petrography of Stone and Ceramic Cultural Materials By Chandra Reedy. Pp. 256 and CD-ROM. ISBN 978 ...

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**Thin-Section Petrography of Stone and Ceramic Cultural Materials**

By Chandra Reedy. Pp. 256 and CD-ROM.

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Chandra Reedy's *Thin-Section Petrography of Stone and Ceramic Cultural Materials* is an extensive review of petrographic work on archaeological and anthropological materials. The use of petrography to analyse lithic and ceramic materials has for some time been a central technique in the study of provenance and ancient technology, but a specific textbook related to method and theory in archaeology and anthropology has long been missing. The field has instead relied on review articles (e.g. Peacock 1970; Whitbread 1995; Williams 1983) or handbooks and methods in geological petrography (e.g. Gribble and Hall 1985; Humphries 1992). Reedy's book is therefore a welcome addition, and is hopefully one of many future publications on thin-section petrography in archaeology, particularly ceramic petrography which methodologically and theoretically has to be defined differently from the study of lithic materials. Reedy does not state for whom the publication is written, but it is clear that the book is intended as an introduction rather than as a specialist's manual. She makes clear at the start that her book is not a treatment of mineralogy or thin-section petrography; she refers instead to a large range of publications covering the preparation and analysis of petrographic thin sections, and gives an elementary introduction to sample preparation and analytical methodology particular in relation to cultural materials.

The book is divided into an introduction and eight thematic chapters, and includes an accompanying CD-ROM. Chapter 1 is a brief introduction to thin-section petrography of ceramic and stone artefacts, and to the book itself. Chapters 2–5 consider studies of stone materials and are naturally divided into different rock types: volcanic igneous rocks (chapter 2), plutonic igneous rocks (chapter 3), sedimentary rocks (chapter 4) and metamorphic rocks (chapter 5). None of the chapters aims to discuss all types of rocks or all aspects of petrographic studies of lithics, but instead focus on certain rocks which have been important in the archaeological study of stone materials and specific topics figured in these studies. Chapters 6–9 focus on ceramic materials, chiefly pottery since this is the most common cultural ceramic material. These chapters are thematically divided and begin with a general discussion about the characterisation of ceramic materials and an overview of the main ceramic inclusions (chapter 6), followed by discussions of thematic studies often used in ceramic thin-section analysis, including provenance

studies (chapter 7) and studies of fabrication, use and deterioration (chapter 8). These chapters follow a structure familiar to students of ceramics as presented in textbooks on pottery, for example Rice (1987) and Orton *et al.* (1993). The ninth and final chapter is dedicated to the study of non-pottery ceramics and clay materials, including sculpture, bricks, tiles and casting cores. The accompanying CD-ROM contains the pictures presented in the book. They are organised in the same order as in the book and are listed in the chapters and sub-chapters of the book.

Reedy stresses that her book is not intended as an introduction to optical microscopy; her methodological statement is rather short and mainly focused on the preparation of thin sections, and a general statement on what information petrologists can read from thin sections. Although she gives good references to further readings on optical microscopy, I believe that as an introduction the book would benefit from some further details of the petrographic microscope and the principle of petrographic analysis. The reason this is lacking is probably because Reedy is an archaeologist and she stresses that her intention is to focus on archaeological issues rather than petrological ones. But there is no reason why a petrologist could not have made a contribution here. Her introduction also has a brief discussion of petrographic analysis of cultural materials, in contrast to natural materials. This is a good point and highlights many of the issues I myself have encountered.

Reedy's book is a good presentation of large quantities of data and discussions of petrographic thin-section analysis related to archaeology and conservation. The text is more in the form of a review of published materials orientated around a common theme, than a free-standing study. This has its advantages when it comes to quickly reviewing particular issues or methods, but I think that the text has the potential to be too unfocused and difficult to access for beginners and students. The reviewed material includes material from most parts of the world, and although it presents the main studies on petrographic analysis in archaeology, it has a clear focus on American studies and studies related to Reedy's own research interests. The book is richly illustrated with good quality pictures of thin sections, used to illustrate points in the text. This makes it easy to follow the discussion in the text without referring back to the original publication. But the pictures are often too small and lacking a detailed description of the different elements in the section to be used independently or as a petrographic atlas. It was never Reedy's intention to publish a petrographic atlas of cultural material, but I mention this simply because I think this is something that is currently missing. The pictures on the CD-ROM can of course be viewed in a larger format and this is valuable, but their organisation following the book makes it difficult use without the book at hand and they does not present any further details of the sections.

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Reedy, Chandra L. 2012 *Image Analysis-Aided Light Microscopy of Glazed Ceramics: Identifying Technological Innovation and Style*. Reedy, Chandra L., and Kamboj, Sachin 2003 *Comparing Comprehensive Image Analysis Packages: Research with Stone and Ceramic Thin Sections*. In *Development of a Web-Accessible Reference Library of Deteriorated Fibers Using Digital Imaging and Image Analysis*, edited by Merritt, Jane. National Park Service, Harpers Ferry, West Virginia, 159-166. Chapter 1 is a brief introduction to thin-section petrography of ceramic and stone artefacts, and to the book itself. Chapters 2-5 consider studies of stone materials and are naturally divided into different rock types: volcanic igneous rocks (chapter 2), plutonic igneous rocks (chapter 3), sedimentary rocks (chapter 4) and metamorphic rocks (chapter 5). None of the chapters aims to discuss all types of rocks or all aspects of petrographic studies of lithics, but instead focus on certain rocks which have been important in the archaeological study of stone materials and specific topics figure advanced.

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*Ore microscopy and ore petrography* / by: Craig, James R., 1940-, et al. Published: (1981). *Geology for archaeologists : a short introduction* / by: Allen, John R. L. Published: (2017). *Atlas of the Rock-Forming Minerals in Thin Section*. by: Mackenzie, W. S. Published: (1980). *Atlas of rock-forming minerals in thin section* / by: MacKenzie, W. S., et al. Published: (1981). *Geological Methods for Archaeology*. by: Herz, Norman. It focuses on the specific applications of thin-section petrography to the study of cultural materials made of stone (as found in architecture, sculpture, tools etc.) and ceramic objects (earthenware, stoneware, porcelain, brick and tile, etc.). The reader can learn the techniques used to identify and characterize such materials; to differentiate between them; to monitor the extent of their deterioration; to determine where they may have originated; and to interpret their fabrication, decoration, and use history. The author has selected the most representative cultural materials for which thin...