



Paleoimaging: Field Applications for Cultural Remains and Artifacts, by R.G. Beckett and G.J. Conlogue, 2010, CRC Press, Taylor & Francis Group, Boca Raton, USD134.00, ISBN 978-1-4200-9071-0.

The book by Ronald Beckett and Gerald Conlogue offers a timely synthesis of the applications of nondestructive scanning and imaging techniques to analyzing ancient skeletal remains and artifacts. The foreword by bioarchaeologist Andrew Nelson emphasizes the importance of even the most basic imaging equipment in obtaining important information for researchers faced with a relatively limited amount of time and resources. The main authors cowrote 9 of the 11 chapters of the book, with 2 single-authored chapters addressing field safety. The book is divided into 4 sections, beginning with standard photographic techniques and computer-based imaging (coauthored with a veterinary MRI Technologist John Posh). Internal reviews are provided by the main contributors' university colleagues specializing in diagnostic imaging and radiology. The authors use a forensic approach to largely anthropological and archaeological subjects; however, the multimodality of the techniques is highlighted at the outset, to help optimize paleoimaging for a wide range of applications.

The paleoimaging methods range from relatively conventional radiography and magnetic resonance (MR) imaging to advanced three-dimensional (3D) videoendoscopy (VE) and multidetector computed tomography (MDCT) scanning. Each chapter begins with a contents section that includes pagination for both primary and secondary topics, as well as case studies and experiments. The text is complemented by nearly 400 images (with color versions of 24 figures), including sequential photographs of imaging protocols and generalized diagrams of key aspects of a particular technology. Unfortunately, despite the familiar shapes of most objects of study (e.g., skeletal elements), only few photographs provide a scale, either on the image or in the figure caption. This would have been particularly useful in close-ups containing labels of specific areas of interest. The accompanying hour-long CD provides a narrative of the authors'

case studies, using maps and color photographs, and thus offers a superb overview to both the professionals and students wishing to make use of imaging techniques. In fact, the reader will benefit by viewing this companion CD before delving into the written text.

The treatment of field imaging techniques, including both data collection and analysis outdoors, is of particular interest, especially those that take place in remote areas and challenging field conditions (e.g., research in Philippine caves and among the shifting sands of Peru). In several chapters, case studies bring the applied aspects of the subject to the forefront. If a soft-cover version of the book is published in the near future, it will make a functional field companion. An entire section is devoted to imaging artifacts, addressing objects both within (internally and externally) and outside their context. The portability of most techniques presented in this book make them ideal for the analysis of both human and animal remains (vertebrates and large invertebrates) in the field, laboratory, or even a museum collection. The ability to analyze an artifact (mummified remains or ceramics, for example) or a fossil *in situ* or in the field tent (the book includes some points on setting up basic laboratory facilities) will make it applicable to a variety of paleontological studies. The continued refinement of computer-assisted image-processing techniques means that high-resolution images can be obtained and analyzed before the end of the field season. The authors make an effective use of both traditional and state-of-the-art technology and demonstrate their adaptability to specific research conditions (e.g., peat bog excavation versus *in situ* analysis of protected mummies). The logistics of cultural interaction in the field and standards of specific imaging methods demonstrate the breadth of this relatively focused body of work. Appendices that provide examples of recording

forms for examination of mummified and skeletal remains, as well as field safety and risk assessment documents, precede the exhaustive indexing section.

Whereas the primary thrust of this work is on anthropological and forensic studies, many approaches and techniques will undoubtedly help in paleontological, paleopathological, and ichnological research by complementing emerging scanning and imaging techniques, such as ground-penetrating radar (GPR), multistripe laser triangulation (MLT), analoglyph stereo imaging, and others. The cost-effective and nondestructive nature of many

paleoimaging technologies make the book a timely reference to those interested in preserving rare fossils or those objects that cannot be sampled or removed from their geological context.

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