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REVIEWS

H.V.F. Winstone, *Howard Carter and the Discovery of the Tomb of Tutankhamun*. Constable, London. 1991. £20.00.

Howard Carter achieved instant world-wide fame in 1922 as discoverer of the tomb of Tutankhamun, the only intact pharaoh's tomb found in modern times. This must surely be the most wonderful and riveting of all archaeological finds. It gave rise to 'Tutmania', which is still with us if the stream of books, the curious mythologies and the crowds that queue to see the fabulous objects recovered from the tomb are any guide.

Carter was an outsider with a chip on his shoulder. He could be litigious, unwise and even dishonest. Despite his undoubted gifts and his great fame he was not by any stretch of the imagination a stimulating or varied man. He seems to have lacked a genuine intellectual curiosity such as drove other archaeologists in Egypt and elsewhere.

He never attended university but went to Egypt aged only 17 as an assistant draughtsman apprenticed to Flinders Petrie. In the 1906-07 season he began work with the wealthy patron Lord Carnarvon, whose name is also associated with the great discovery of November 1922. Carnarvon was with him when he broke through the plaster wall into the tomb and he asked Carter, 'Can you see anything?' The reply was, 'Yes, wonderful things'.

This was, however, only the antechamber. Beyond were three more rooms, including the astonishing burial chamber with the boy king's mummy enclosed within four gilded shrines, a stone sarcophagus and three tightly fitting coffins, the inner one of gold.

It surprised me to learn that clearing the tomb of all its treasures took almost ten years. There were considerable technical problems to overcome, such as dismantling the shrines, raising the immensely heavy sarcophagus lid of granite within the confined space and separating the coffins which were glued together. The vast quantity of often fragile grave goods needed careful conservation.

When I borrowed this book my friendly librarian wanted to tell me about the 'curse of the Pharaohs', the theory that mysterious death took many of those who dared to interfere with the tomb. Carnarvon himself was the first and most notable victim. Carter sensibly would have none of it.

There is more yet to be learned of Carter's great discovery. New York's Metropolitan Museum did not allow Winstone access to its files, so that Hoving's accusations in *Tutankhamun: the Untold Story* (1979) cannot be confirmed. A full report on the tomb is only now being prepared by Oxford's Griffith Institute. Let us hope that it will bring together all the relevant information and illustrate all Carter's 'wonderful things'.

Nigel Prickett

Anthony Clark, *Seeing Beneath the Soil. Prospecting Methods in Archaeology*. B.T. Batsford, London. 1990. 176 pp., tables, figures, glossary. \$74.95.

The application of geophysical techniques to discover archaeological sites began shortly after World War II and has grown from an essentially experimental approach to a widely used set of tools available to the archaeologist. This volume represents a state-of-the-art summary of geophysical techniques as they are used in British archaeology by an author who has a wealth of practical experience on which to draw.

There are two major techniques of geophysical site location discussed in this book: resistivity and magnetometry. Resistivity is based on the principle that the ground will carry an electric current in relation to its moisture content. Buried remains of human activity affect the degree to which this moisture is distributed and so will affect the earth's ability to carry this current. Mapping changes in the ground's resistance, therefore, has the potential to reveal archaeological features like pits and ditches that concentrate moisture. Magnetometry takes advantage of the high iron content of the earth's magnetic crust. Iron, in the form of various compounds, is weakly magnetic. Human activity tends to redistribute some of these compounds and make others more magnetic (principally through heating) and hence leads to small anomalies in the earth's magnetic field. In magnetometry these anomalies are measured to reveal the location of archaeological features. The first three chapters in *Seeing Beneath the Soil* treat these two techniques in turn, in addition to providing an entertaining history of the development of geophysical techniques in British archaeology. Additional chapters deal with magnetic susceptibility (recording the response when a magnetic field is applied to the ground, rather than variations in the earth's magnetic field) and a range of lesser known techniques including ground-penetrating radar, geochemical methods (principally phosphate analysis), acoustic reflection, metal detectors, thermal sensing, induced polarisation and even dowsing. Chapter 6 deals with the practical problem of choosing which method to apply depending on the types of archaeological features thought likely to occur. The last two chapters deal with how plots of readings should be produced and evaluated, and the practicalities of setting up a grid across a site to enable systematic recording.

Although written very much from the perspective of British archaeology, *Seeing Beneath the Soil* has plenty to offer the New Zealand archaeologist. The types of features that can be located with geophysical techniques – pits, ditches, ovens, and occupation surfaces – are well represented in New Zealand. Each of the techniques is explained in theory, details given of the instruments required, and archaeological examples provided that illustrate the advantages and pitfalls associated with the particular system. Many of the examples are drawn from cultural resource management projects, so geophysical techniques should not be seen as useful only to academic archaeology. A recurrent theme throughout the book concerns the increases in speed of recording and presentation quality that have come with the availability of computerised data loggers and modern graphics software. Recent advances in both these areas

mean that today, more than ever, geophysical techniques should be seen as a cost effective solution to the problems of site location. *Seeing Beneath the Soil* is an excellent place to start for those interested in applying these techniques.

Simon Holdaway

Brian Gill and Paul Martinson, *New Zealand's Extinct Birds*. Random Century, Auckland. 1991. 110 pp., 25 colour plates, 7 black and white reproductions. Hardback. \$49.95.

Archaeology and the study of extinct birds have had a long and close association in New Zealand. It was the discovery of moa bones in the late 1830s that stimulated the development of both fields, on the one hand opening the ongoing scientific debate about the taxonomy, appearance, habits and ultimate fate of these most curious birds, and on the other fostering the search for clear evidence of their contemporaneity with people and explication of their interactions. Over the ensuing century and a half archaeology has brought to light evidence of many further extinct birds, and the detailed zoological studies of these animals have contributed to our modern understanding of prehistoric ecology and economics in this country.

Brian Gill and Paul Martinson's book provides a long overdue summary of current information on this subject. Not since Oliver's *New Zealand Birds*, published 37 years ago, has there been a single authoritative source of information on our extinct avifauna. Much has changed in that time. The taxonomy of moas has been revised several times, many other species have been renamed, at least 12 species have been described for the first time, and sadly at least two further species have gone to extinction.

In all the book deals with 57 species and another eight subspecies that have gone to extinction over a period of some 40 million years. These are discussed in four chronologically organised chapters dealing respectively with pre-human extinctions, moas, other pre-European extinctions, and those since European contact. Brian Gill's very readable text gives a brief account of the discovery and naming of each species, and where possible a description of their appearance and habits. Twenty-five of the birds are superbly illustrated with Paul Martinson's full-page colour paintings.

The descriptive sections of the book are preceded by an introductory chapter which attempts to provide both background to the subject and interpretation of the evidence. The former includes a brief account of New Zealand's geological history, a summary of the numbers and taxonomy of birds to be dealt with, and their classification into fossil, sub-fossil and recently extinct categories. Archaeologists will note that most midden material has been included in the subfossil category, and this is distinguished from the recent extinctions by the arrival of Europeans. While this approach may simplify the

organisational structure of the data, it combines material that may have quite different taphonomic histories and could lead to errors in the dating of some extinction events.

The interpretative section deals with the rates and causes of extinctions, and it is in this respect that I found the book least satisfactory. The range of potential causes are reviewed in less than a page and a half of text, and little attempt is made to select between them. Even in the chapter on moas, where the causes of extinctions are touched upon again, there is no attempt to test the hypotheses against the abundant archaeological evidence. Whenever extinctions are discussed, whether it be in learned scientific circles or amongst the general public, the ascription of cause figures high in the list of questions to be answered. While it is only to be expected that this book is not concerned with archaeological issues, it is surprising that it does not provide a more detailed analysis of the mechanisms of extinction.

New Zealand's Extinct Birds was written for a general audience, and its clearly written text and fine illustrations succeed admirably in communicating a wealth of information about our extinct avifauna.

Ian Smith

R.M.S. Taylor, *Anatomy and Biology of Tooth Dislocation and Wear in the Pre-European Maori and Australian Aborigine: Edge-to-edge Bite, Crowded Anteriors, and Other Dental Features*. Published jointly by the Department of Anatomy, University of Auckland, and the New Zealand Dental Research Foundation, Auckland. 1991. 168 pp. with figures and tables.

This work represents the accumulation of Taylor's many years of research on tooth wear and dislocation in prehistoric Maori populations, which he compares with previously unpublished data on tooth wear from pre-contact Australian Aboriginal populations. Taylor presents dental wear data on 258 individuals from museum and university collections throughout Australia in what is probably one of the most comprehensive discussions of dental wear in an anthropological perspective. His analysis is primarily descriptive, as Taylor argues that inadequacies in the data make statistical analyses inappropriate.

The first half of the publication deals specifically with tooth dislocation, and addresses the biological, mechanical, anatomical and cultural factors which might lead to dislocation. Taylor points out that severe masticatory stress and alveolar abscesses are most likely not responsible for the relatively high rate of dislocation (which primarily affects the first molars) in both prehistoric Maori and Australian Aboriginal populations. Instead, he suggests that cultural practices, which lead to an external force being applied to the teeth, are more likely to have initiated the condition, which then may have been exacerbated by mechanical and pathological conditions. The comparison of the Australian and

Maori data allows for possible cultural factors to be assessed.

Regarding Maori tooth dislocation, Taylor modifies his earlier hypothesis (1963, 1970) placing less emphasis on the actual chewing of fern root and more importance on the external, unilateral pressure applied as the fern root was held on the teeth. Looking for similar patterns of behaviour in Australian Aborigines which would produce similar application of stress, Taylor identifies the reported habit of Murray Valley people of chewing reeds in order to prepare fibre for netting. He is very careful in stating that fragmentation, determination of sex, age and location of samples can all affect the interpretation of cultural causes of tooth dislocation. As there are often many problems with the reliability of this type of information in museum collections, Taylor admits that very broad causative interpretations are not possible.

The second half of this publication deals with the subjects of general tooth wear, edge-to-edge bite, tooth crowding and other dental features such as caries, tooth avulsion, and root divergence which appear in the material studied. Taylor also discusses the lack of first molar dislocation in Eskimo populations despite the extreme use of the teeth in chewing and softening skins. He offers the explanation that hides, unlike fern root or reeds, are not sufficiently rigid to allow the application of external, lateral pressure on the teeth. Taylor includes a very useful and interesting appendix listing plants of which roots, rhizomes and stems were used by the North Queensland Aborigine.

For those not conversant with dental terminology, this work can be difficult to follow at times. In addition, I believe Taylor's suggestion that the traditional Australian Aboriginal diet was more varied than that of the New Zealand Maori is debatable. However, Taylor has combined both his dental training and anthropological knowledge to produce a thorough, valuable and unique piece of work.

Elizabeth Matisoo-Smith