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REVIEWS

Atholl Anderson, Brian Allingham, and Ian Smith, eds. *Shag River Mouth: The Archaeology of an Early Southern Maori Village*. Research Papers in Archaeology and Natural History, No. 27. Canberra: ANH Publications, RSPAS, The Australian National University. 1996. vi + 294 pp. ISBN 0-7315-0342.1. AUS \$49.00.

It would be difficult to identify a site more intimately connected with the long and rich history of South Island New Zealand archaeology than Shag River Mouth. In Maori tradition Matakaea (Shag Point) was where the voyaging canoe Araiteuru - part of the famous 'fleet' - was wrecked, spewing its cargo of baskets, gourds, and kumara which became the spherical boulders at Moeraki and Katiki. Julian van Haast (Director of the Canterbury Museum) visited Shag River Mouth in 1874, and opined that the local stratigraphy confirmed his hypothesis of a pre-Maori, 'moa-hunter' period. Captain Frederick Hutton (Director of the Otago Museum) made more extensive investigations the following year, allowing him in 1876 to directly challenge van Haast: "there is certainly not the slightest evidence to show that this spit was occupied at two distinct periods . . ." (p. 3). Augustus Hamilton and Frederick Chapman dug there in the early 1890s. The most extensive work at Shag River Mouth, however, was carried out over several decades by David Teviotdale, who co-published aspects of his investigations there with H. D. Skinner, and who donated much of his extensive collection from Shag River Mouth to the Otago Museum. Although some later test pits were excavated by David Simmons and Michael Trotter, interest in the site largely faded after the Teviotdale era, until the initiation in 1987 of a major new phase of systematic excavation under the direction of Atholl Anderson, as part of his Southern Hunters archaeological project.

Anderson and Smith outline the several issues that had been raised by these previous investigations, and for which the renewed, "systematically conducted" excavations from 1987-89 were deemed necessary. Aside from clarifying the stratigraphy of Shag River Mouth, determining the chronology of occupation, and whether this was of a long or shorter time span, was judged a foremost problem for study. Another issue was that of function. Had the site been a single village, and if so was variation in architecture, features, faunal remains, and artefacts capable of revealing internal spatial differentiation in activity areas and function? Finally, it was considered necessary to try "to understand Shag Mouth in its broader context, first its environmental setting and then within models of its cultural content" (p. 11). Over several field seasons between 1987-91, involving a variety of excavation and sampling procedures as well as coring and pollen analysis, Anderson and his colleagues pursued this research agenda. Their excavations resulted in the recovery of precisely 107,220 'items' including artefacts (6,751), bones (25,070 NISP), and shellfish (75,399 MNI). This volume is their definitive monograph, intended to make available to the archaeological community the comprehensive data sets thus obtained, as well as their more synthetic conclusions and interpretations.

Shag River Mouth: The Archaeology of an Early Southern Maori Village is indeed a tour-de-force of the archaeological site monograph (which, with the advent of CD-ROM based, 'hyper-text' publishing, may soon become an endangered species). Published in A4 format on high-quality paper, the volume's nearly three hundred pages are divided into four sections and twenty chapters. Data are amply supplied in a large number of tables, charts, and figures, and careful attention is paid to issues of quantification (pp. 70-73). The numerous and beautifully-executed line drawings of artefacts are a joy to study. As with the research design it reports, the volume is systematically structured: details of excavations, stratigraphy, and chronology are logically followed in sequence by chapters on material culture, faunal remains, and finally by synthetic sections on environmental history and archaeological synthesis. There is nothing avant-gard or experimental about this site monograph; it knows what it is, which a decidedly positivist account of a project that was conceived and conducted squarely within the so-called *processual* paradigm of prehistoric archaeology.

The short space allocated to this review precludes a detailed discussion of every chapter and contribution; I therefore limit my remarks to a few highlights. A firm radiocarbon chronology for New Zealand prehistory has

been a contentious issue in recent years, a debate in which Anderson has been a key player. Prior to their renewed excavations, only four ^{14}C dates were available for Shag River Mouth. In Chapter 7, Anderson, Smith and Higham now report no less than 47 age determinations, run both on wood charcoal and other substances (moa bone and egg shell, mollusks). As the authors observe, the results of this extensive dating program are "extraordinary" (p. 67), in that they support an interpretation of Shag Mouth being "continuously occupied for a period of perhaps 20-50 years in the 14th century A.D." (p. 67). This is a much shorter time span than might have been anticipated given the areal extent of the site and the deep stratigraphy in certain areas. Nonetheless, their chronological interpretation is quite convincing.

Another strength of *Shag River Mouth* is the careful and detailed studies of material culture, presented in Chapters 9-12. Flaked stone tools are accorded a more detailed analysis (including extensive illustrations of examples) than is usually the case in Polynesian archaeology. The payoff comes through "clear evidence of functional differences between parts of the site" (p. 101). For aficionados of the stone adze, the Shag River Mouth site provides one of the largest collections known: some 432 adzes in the Otago Museum's collections (primarily from Teviotdale's early work), supplemented by another 99 specimens from the recent excavations. This vast assemblage is analyzed both in terms of classic New Zealand adze typology, and in terms of technology (including refurbishing and recycling of adzes). The fishhook assemblage, and a variety of other bone, stone, and shell artefacts are also extensively described and illustrated.

Six chapters deal with the large collection of faunal remains obtained during the renewed excavations, and given that earlier excavators did not systematically recover or study animal bones, it is in this arena that the *Shag River Mouth* volume makes some of its most significant new contributions to understanding South Island prehistory. The moa remains (4,747 NISP) are treated in particular detail, with separate contributions on taphonomy, and hunting and butchering patterns. In some respects more interesting are the 54 species of small birds also represented in the faunal assemblage. Fish remains, dominated by barracouta, and shellfish are also extensively treated.

The volume concludes with two synthetic chapters. Boyd, McGlone, Anderson, and Wallace review the evidence for late Holocene vegetation history in the vicinity of Shag River Mouth, based on sediment cores, pollen

analysis, and charcoal identification. They are able to recognize "clear evidence of the impact of Polynesian activity," with a first phase concentrated around the site itself, and a second phase of greater regional impact resulting in "the development of an open landscape throughout the district" (p.274). In the final chapter, Anderson and Smith discuss the site as "an early Maori village," addressing issues of internal spatial organization, occupation span, food supply and population size, and placing the site in a broader regional context. They conclude that Shag River Mouth was a single, integrated village, with spatially differentiated activity areas that included a "central butchery and cooking area surrounded by midden dumps." Dwellings, associated with specialized working areas for stone and bone, were "clustered in groups or rows around the central area" (p. 278). As noted above, this village was short-lived, with a maximum time span of 50 years suggested by the authors. Shag River Mouth is seen to be part of a peak phase of settlement density in southern New Zealand in the 14th to early 15th centuries, and was one of several major base camps (including Papatowai and Pounaweia) that "stood at the apices of more extensive settlement systems" (p. 290).

Atholl Anderson and his colleagues are to be congratulated, both for the carefully planned and executed field and laboratory research at Shag River Mouth, and for this volume which provides a lasting record of one of New Zealand's classic Southern Maori sites. They have set a standard for research and timely publication that one hopes others in Polynesia will emulate.

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Charles Higham. *The Bronze Age of Southeast Asia*. Cambridge University Press. 1996. Cambridge World Archaeology (series) 381 pages plus 16 pages of introduction, 159 illustrations, ISBN 0 521 49660 8 (Hdbk) 0 521 56505 7 (pbk), \$39.95 (Australian).

This volume represents a welcome addition to the general literature on the rise of social complexity as well as a very timely update of the regional culture history of Southeast Asia. By examining the development of Bronze Age societies across a wide geographical area including China and, in much more abbreviated form, eastern India and Island Southeast Asia, Higham places the social and technological aspects of the Bronze Age in mainland

Southeast Asia firmly in their regional context while at the same time attending to the problems and archaeological characteristics of each individual area. By including comparative materials from across this wide region, Higham demonstrates convincingly the truism that modern political boundaries have unnecessarily channelled archaeologists' views of Southeast Asia as a cultural and economic backwater. Instead, he documents the participation of Southeast Asian polities in vibrant and creative networks of exchange and information and technology flow which ran across ecological and ethnic divisions through time. To borrow a concept utilised successfully in Near Eastern archaeology (Lamberg-Karlovsky, 1986), Higham's treatment of the Southeast Asian region allows us to begin to perceive the outlines of the *longue durée* (Braudel, 1972) of prehistory across this wide and varied area.

Higham takes as one of his starting points the contention of some scholars (such as Muhly, 1988) that Southeast Asia is in some way anomalous in terms of the way in which bronze technology was introduced and used by ancient communities in the region. According to Higham, this contention is based partly on unreliable radiocarbon dates. He argues that the regional chronology needs to be re-evaluated due to advances in technology and methodology, most particularly the introduction of the technique of AMS radiocarbon dating into the area, especially at the site of Non Nok Tha, and by additional attention to the issues of sample integrity and secure archaeological context. Higham argues that once the problematic dates have been set to one side, the chronological position of the earliest systematic use of Bronze in Southeast Asia falls into line with the ways in which bronze is used in other areas of the world, such as the Aegean, Mesopotamia, Iberia and China where changes in metallurgy accompany large-scale changes in social structure.

On the present evidence, Higham argues that bronze technology appears to have been adopted by peoples in southern China, Vietnam and northern Thailand as a result of contact with the bronze-using polities of China's Central Plains (the Shang and Western Zhou dynasties) and secondarily by contact with slightly later bronze-using Chinese polities such as the Chu of Middle Yangzi and the people of Sanxingdui in the Sichuan Basin. Higham acknowledges that earlier dates from secure contexts in northern Thailand or Vietnam would change this interpretation radically but wisely notes that the evidence for an indigenous Southeast Asian tradition of intensive metal-working remains to be demonstrated.

In contrast to the region bordering south-central China, areas such as central Thailand and the Mekong Valley exhibit a different relationship to metallurgy. Rather than following the "Chinese" emphasis on bronze vessels, ornaments, musical instruments and weapons, metallurgy in these areas appears to be used for ornaments and agricultural tools with the predominant emphasis on iron. Objects such as carnelian and glass beads document connections with India and island Southeast Asia which would later become elaborated in the spread of Hindu religious ideas and practices into the region, and the development of polities such as that found at Angkor Wat in the 9th century AD. This regional distinction is one which encourages greater levels of sophistication in archaeological treatment of "secondary" states and the so-called "peripheries" of the major world civilizations which have been the traditional focus of anthropologically-trained archaeologists in many parts of the world.

From a structural point of view, this work is very well-written with useful summaries and wonderfully-rendered illustrations which allow even the non-specialist to gain a more sophisticated level of understanding of the cultures that Higham is discussing. The presentation of data by geographic area (as opposed to modern political units) is clear and nicely structured as befits a regional synthesis of this nature.

As an archaeologist who has worked in China, I would however, insert a minor quibble with the editing: several times in the first half of the book there are distracting and careless errors such as the inaccurate use of Chinese personal names as surnames on page 51, together with the occasional mixing of Wade-Giles and Pinyin forms of romanisation and the inconsistent treatment of K.C. Chang's name. I realise that this stems in part from Higham's laudable interest in going beyond his own area of expertise to reclaim Chinese archaeology from the hegemony of Sino-centric vision, but it wouldn't hurt to get the details right.

Overall, this book is to be thoroughly commended. As is to be expected from a scholar of his experience and depth of interest, Higham's treatment of his subject matter is magisterial and comprehensive. The primary focus of this book is, however culture-historical despite its nod to questions of theory regarding the origins of social complexity, the role of trade and the place of metallurgy in systems of hierarchy. Higham engages thoughtfully with Brumfiel and Earle's (1987) ground-breaking article but falls short of a critique of any of the models proposed. Neither does he comment on the use

or usefulness of models of social complexity derived from the ethnography of Southeast Asia (e.g. Leach, 1954; Tambiah, 1985) which have been gaining currency in other areas of the world (see for example, Demarest 1992). In a similar vein, none of the growing literature on the role of production in social complexity has been included. It would be interesting to see what perspectives the data offered by Professor Higham cast on Costin's (1991) notions of productive scale and intensity for example or the ritual and social aspects of metallurgical production offered by some of our Africanist colleagues (for the most recent examples see Schmidt, 1996). Finally, on a much finer-scale of analysis, I would also question the tendency to view grave goods as unifunctional (for instance the view that swords are weapons as opposed to, say markers of status, connection and ritual potency, or any combination of the above). These are, however minor criticisms and do nothing to detract from the general significance of this work. The Bronze Age of Southeast Asia is a required text for Southeast Asianists and those working on the theoretical issues of production, metallurgy, the development of social complexity and inter-regional interaction.

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Houghton, Philip, 1996. *People of the Great Ocean: Aspects of Human Biology of the Early Pacific*. Cambridge, Cambridge University Press. \$99.50.

Philip Houghton trained as a surgeon and for the past 25 years has been teaching gross anatomy in the Department of Anatomy and Structural Biology at the Otago Medical School. Houghton's work on Maori and Pacific physiology explores the interface between Biology and Prehistory, an area of research pioneered by Sir Peter Buck working from Houghton's institution in the early decades of this century. His first book in this field *The First New Zealanders* (Hodder and Stoughton 1980) was enormously successful with both an academic and a non-academic readership and has become an essential source for all scholars of Maori prehistory.

The current volume examines in greater depth many of the same issues introduced in *The First New Zealanders* but extends the research area further out into the Pacific. It also lays out in detail Houghton's adaptationist explanation of the Polynesian phenotype as typified by the Maori. Houghton makes two important points early on in the text which are strong themes throughout the work. First, he argues, and demonstrates in Chapter 2, that the Polynesian phenotype is unique amongst *Homo sapiens* and second he insists on adopting an explanatory approach firmly grounded in the principles of biology, physiology and functional anatomy. To this end he rejects the traditional biometric approaches which accumulate osteological measurements without any underlying theory of biology and produce dendrograms that purport to recapitulate historical relationships. Instead he sees the human form as a "marvelously complex structure (which is) responsive and adapted to the needs of the individual and the demands of the environment." (p 145). It is this principle which directs his work.

In Chapter 1 Houghton discusses the Pacific world from the point of view of geomorphology, geology, biogeography, subsistence and technology and establishes the parameters within which human evolutionary change has occurred. He adopts Green's distinction between Near and Remote Oceania, pointing out the fundamental physical differences which occur once you move east of the Southeast Solomons.

Chapter 2 examines Pacific physique, particularly issues of stature and mass (height and weight). His basic thesis is that there are very significant differences between the peoples of Near and Remote Oceania such that "with passage into Remote Oceania people get bigger, much bigger" (p 55).

Chapter 3 ties environment to physique and looks at why the changes outlined in Chapter 2 occur. This is the chapter in which Houghton outlines his model of Polynesian cold adaptation. He draws on Bergman's and Allen's Rules which argue that within a warm blooded polytypic species those populations living in cold regions tend to have a greater body mass and shorter extremities than those living in warm regions. Thus all else being equal, people living in similar environments should have a somewhat similar body form and size. But, while the peoples of Near Oceania do exhibit a physique expected in tropical climates, the inhabitants of tropical Remote Oceania appear to be adapted to a far colder environment. In fact, they exhibit extremes of this form within the human lineage. Houghton attributes this phenomenon to the fact that Remote Oceanic peoples are exposed, through their maritime adaptation, to extremes of cold and wet. Through a complex set of heat balance calculations, for which, one has to add, not all variables were able to be firmly established, Houghton shows that the Polynesian phenotype is adapted to minimise heat loss in wet cold conditions.

To demonstrate this point, Houghton runs a set of computer simulations which estimate theoretical survivability rates at different latitudes for different Oceanic body masses. The figures look extremely pessimistic but Hawaiians and other Polynesian groups come out well on top in any survivability equation. The immediate purpose of the computer simulation was to demonstrate that the environment has been a major determining factor in Polynesian body form.

Chapter 4 looks at skeletal morphology in an attempt to identify the precise reasons why the Polynesian body form is so well adapted to minimising heat loss. In discussing issues like cranial base angle Houghton provides a clear

illustration of how seemingly trivial osteological variations can have far reaching implications in physiology. A further warning against comparing traits across populations without first trying to understand their biological and functional basis.

Chapter 5 reviews different models and methodology in Pacific biological anthropology. In this chapter Houghton is critical of traditional biometrics but expresses optimism in other areas of genetic research in the region. Again, a strong functionalist bias comes through the work.

Chapter 6 revisits some of the issues raised in *The First New Zealanders* providing a descriptive assessment of Pacific health, demographics and palaeopathology. Chapter 7 extends some of the issues explored in Chapter 6 into the post-European era looking at such things as the relationship between culture and genetics in contemporary health issues. In this and the previous chapter Houghton also explores the costs of the Polynesian adaptation, seen for example in the high modern incidence of non-insulin dependent diabetes.

People of the Great Ocean is well produced and carefully edited. Illustrations and tables are clear and pertinent. It is too expensive at \$99.00 but within the range we have come to expect in this part of the world. As with *The First New Zealanders*, Houghton has written in a clear and flowing style that is easy to read, even though the topics are far more technical than in the earlier volume. This is a great book which makes a fine contribution to Pacific scholarship. He is controversial and I expect more to be said on cold adaptation models. I also felt that Houghton might have spent more time discussing the role of bio-cultural factors in determining body form. But, like Sir Peter Buck, Philip Houghton is one of the very few scholars writing on the physical anthropology of the Pacific who thoroughly understands both fields of Prehistory and Biology. As a Pacific archaeologist, I found this volume a most welcome addition to the literature.

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Ian Hodder. *Theory and Practice in Archaeology*. London: Routledge, 1992, 285 pages.

Recently reissued in paperback, this volume by one of the most provocative writers in modern archaeology, interweaves nine chapters written in 1992 with ten articles published over the preceding decade. Its purpose is, in part to put right some "misreadings" of his work, but also to demonstrate its "developmental coherence" and show how the theoretical perspectives of post-processual archaeology can be linked to practice.

It is organised in four parts. After a brief introduction examining the relationships of theory and practice in archaeology and their implications for social thought and behaviour, Part One outlines the basic precepts of Hodder's symbolic and structural approach. Some implications of these are explored in Part Two, and their challenge to the dominant processual archaeology debated and evaluated in Part Three. In Part Four Hodder examines aspects of his contextual, interpretive archaeology in practice.

The central issues addressed in this book will not be new to those familiar with Hodder's work: the interdependence of data and theory, and consequent limitations of a narrow positivist approach to archaeology; the active role of material culture in conditioning social organisation and behaviour; the importance of context and association in deciphering meaning from the archaeological record; the potential for multiple 'readings' of that record; and the role of a narrative style that conveys the process of interpretation in validating the 'reading' that is offered. However there is something fresh in the way they are presented.

Although I have never been a fan of volumes of collected papers, and found it somewhat annoying to read in Chapter Two (newly written) that the author no longer believed some of his conclusions in Chapters Three (written in 1982), Four (1984) and elsewhere, I came to appreciate that this was part of Hodder's purpose. The self-reflexive journey on which he leads the reader is in itself an example of the hermeneutic approach he espouses—building interpretation through repeated examination from different perspectives, looking for coherent structural relationships and correspondence with evidentiary data, and consciously acknowledging where shifts of interpretation take place. Critical reassessment is crucial to the process and this book provides it.

Nonetheless, I found several reasons to doubt whether Hodder's journey was worth taking. Much of the writing is densely layered, and there is considerable repetition of material from one reprinted chapter to another. For those that like their archaeology to be about sites, dates, artefacts and the like there is precious little here. Apart from brief forays into Neolithic tombs in Western Europe (Chapters 3 and 4) and the houses of Çatal Hüyük (Chapter 16), there is only one chapter that deals with 'real' archaeology. Chapter 15 is undoubtedly the best part of the book, describing Hodder's excavations (yes, he has done some) of the Haddenham causewayed enclosure in a narrative that illustrates the contingent, sometimes haphazard process of archaeological interpretation in practice. As an active agent in conditioning archaeological behaviour this chapter may be more effective than the book of which it is a part.

Ian Smith
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Luftbildarchaeologie in Ost- und Mitteleuropa: Aerial Archaeology in Eastern and Central Europe. [Proceedings] Internationales Symposium 26.-30. September 1994, Kleinmachnow [Potsdam]. Redaktion: Horst Geisler, Petra Woidt. (Forschungen zur Archäologie im Land Brandenburg, 3.) Potsdam, Brandenburgisches Landesmuseum für Ur- und Frühgeschichte, 1995. 319 pp., about 340 line drawings and photographs (some colour). Hardbound. Price: DM 190.

This symposium marks a remarkable advance in world archaeology of the last decade: the opening of the skies in eastern Europe to private flying and aerial photography. This occurred, as one of the Hungarian contributors notes, 'after the discontinuance of regulations antedating the period before the political transformations'. The painfully slow reversion to free access to the skies is illustrated by three papers from the former German Democratic Republic (East Germany): on Sachsen-Anhalt (by Ralf Schwarz) and Sachsen (by Dana Jannasch), and South Brandenburg (by Markus Agthe). Work there has only been possible since 1991 and is driven by industrial development concerns and the need for a regional site register. It appears now that only Italy restricts flying and aerial photography, although there has been recent work done there in the areas first documented by Bradford in his *Ancient Landscapes* (1957).

The title of the volume is a little misleading since a number of the contributors are from the Aerial Archaeology Research Group (U.K.) (AARG) which co-organised the symposium. Their contributions were evidently welcomed by the eastern Europeans, brokered by Otto Braasch, who recognise the much greater depth of experience in the U.K. 18 of 39 papers are in English, some contributed by the Czechs and Poles; one is in French, with the balance in German mainly on the regions of Germany, Austria and Hungary. AARG with some 400 members, a twice-annual newsletter, and an annual meeting is now effectively the world meeting ground for aerial archaeology.

Well arranged, the papers give prominence to the U.K. experience, which in general concentrates on the integration of aerial photography with the functions of the three National Monuments Records (the U.K. equivalent of our site recording scheme and statutory site register). D.R. Wilson's 'History of aerial photography - success and failure' and Rog Palmer's 'What an opportunity!' (i.e., for the eastern Europeans to capitalise on the English experience) offer new thoughts on the wealth of data and how its appropriate classification will feed into the monuments record. (The idiom of Palmer's title may or may not translate easily into German - one fears it will not because there are editorial lapses in several places in the work.) A great range of evanescent crop marks of great import in the study of the lowlands, where upstanding earthworks have been largely destroyed, have been photographed in the U.K. in recent decades. Some have been tempted to analyse them as phenomena in their own right. However, Palmer stresses the need to integrate aerial archaeology with programmes of fieldwalking and excavation so as to understand the archaeology under the crop mark.

This theme is taken up by Marilyn M. Brown (Royal Commission on the Ancient Monuments of Scotland) in 'Private view to public perception', a careful and detailed account of the National Monuments Record of Scotland, and Robert H. Bewley and Victoria E.P. Fenner (both Royal Commission on the Ancient Monuments of England) on the National Mapping Programme and its Thames Valley pilot project respectively. These are followed by Frances M. Griffith's paper on regional aerial reconnaissance in Devon and county monuments protection where experience and practice are broadly similar to New Zealand.

In a more technical vein are papers by Rog Palmer on 'Photo interpretation, mapping and AERIAL', dealing with the integration and finished mapping of

repeated observations of a site complex; Anthony Crawshaw on aircraft, camera and films, which is full of precise recommendations and options, for example, that UV(0) filters are far superior in cutting out UV components of haze (the blue haze that plagues colour landscape shots in New Zealand) than are Skylight 1A or 1Bs, contrary to received opinion which holds that there is little difference; and John G.B. Haigh on current developments in AERIAL (see above, a programme designed to rectify oblique photographs). AERIAL can now handle ground slope and relief factors, provided there are adequate control points available on the photograph, and is being upgraded to fit into the Windows environment. At about 500 Pounds it is cheap enough to purchase.

Gillian Barrett's paper 'Recovering the hidden archaeology of Ireland' is a fine regional study of the River Barrow in Counties Kildare, Carlow and Laois. Her paper and those of the other U.K. authors between them are an excellent overview of the state of U.K. and Irish aerial archaeology from which any programme of survey will learn. However, New Zealanders should be aware that the general practice is to use low-angle oblique (i.e., near vertical) aerial photographs of smallish areas (no more than 400 m long), registered and corrected by AERIAL on the 1:2,500 or 1:10,000 topo maps for which there is no New Zealand equivalent. We would have to enter control points in the course of field visits which would be impractical in the volume needed for an area survey.

The German papers are kicked off by Otto Braasch reviewing developments since the end of the Second World War. He uses false-colour infrared to reveal the existence of pits and other features. Winfried Gerstner, Ralph Zantopp, Michael Doneus and Helmut Becker separately discuss German software technology similar to AERIAL in later papers, with Becker paying particular attention to integration with geophysical data. Jorg Fassbinder reviews geophysical developments which increasingly are being integrated with aerial photographs.

Studies of regional scope are reported by Michael Doneus for Vienna and surrounds using digital terrain models, Ralph Zantopp for the middle Rhine, Martin Gojda for the region around Prague, Zdenek Smrz for Bohemia, Miroslav Balek for Moravia. I do not pretend to follow the German but it is clear that some useful combinations of orthophotogrammetric conversion, GIS and various graphical outputs are in use. Equipment and processes used

are clearly documented. Stanjek and Fassbinder discuss the origin of soil and crop marks and features defined by snow drifts.

Three papers address the area of the former Czechoslovakia: Jaromir Kovarnik on Moravia and Ivan Kuzma on Slovakia review the history of aerial photography, including joint archaeologist and military endeavours undertaken from as late as 1983. Elena Hanzelyova (writing in English) reviews the Slovakian national site recording scheme launched in 1991. Poland is covered by a paper of regional scope by Włodzimierz Raczkowski who engagingly notes of settlement pattern studies that 'induction is the only accepted way of concluding'.

Of Roman sites, Zsolt Visy discusses the limes in Hungary. Gabor Bertok contributes an excellent paper based on a single Hungarian Army Second World War photograph of Contra Bononia, a Roman fortification on the Danube in Serbia. The only French paper, by Rene Goguey, reports flying in Hungary and Czechoslovakia but concentrates on Roman sites in France.

Finally, to the really exotic: a GIS study by Jutta Haser of the Sudan (8,200 settlements recorded from 1:40,000 verticals in an area of 16,000 km²), kite-mounted camera work by Bogdan Zurawski jointly with Canadians in a series of excavations, also in the Sudan (stunning photographs of buildings at a scale of about 1:200), and Song Baoquan (based in Germany) reporting on work in the People's Republic of China commencing in 1992. The last study also uses U.S. military photographs from 1928-1942 held in the U.S. National Archives and Records Administration, Washington D.C. Now, that's an opportunity!

Kevin Jones

Christophe Sand. *"Le temps d'avant", la préhistoire de la Nouvelle-Calédonie.* Paris, L'Harmattan. 1995. 356 pages, 214 figs. Price 210 Francs.

Every so often an important book about Pacific archaeology is published in French. José Garanger's *Archéologie des Nouvelles-Hébrides* was one such; Christophe Sand's book about New Caledonia is another. Garanger's work was eventually translated into English and it is very much to be hoped that Sand's will also be made more widely available in this way. Although Sand

is publishing summary papers in English language periodicals there is a great deal in the book that will not appear in this form. In the meantime, therefore, anyone interested in the archaeology of southern Melanesia should make the best they can of the French version.

The book is a revision of the author's doctoral thesis. It is a comprehensive review of what is known of the prehistory of New Caledonia, covering not only the reasonably well established pottery sequence but a wide range of other information about field monuments and settlement patterns. It raises some important issues about demographic trends and social organisation, and about the orthodox view of 'traditional' Kanak society.

Three introductory chapters describe the natural environment, summarise ethnographic accounts of Kanak society and outline the course of archaeological research in New Caledonia. The central part of the book follows a broad chronological sequence. There is a chapter on the possibility of pre-ceramic settlement, two chapters on the Koné period (roughly the first millennium BC) and one each on the first and second millennia AD. Then there are two chapters about socio-political development and demography. The concluding chapter summarises 3000 years of prehistory in a context of environmental impact, population growth, intensification, regional variation and external influences. There is a lengthy appendix on the effects of European contact on demography of indigenous people in North America and the Pacific in general and New Caledonia in particular.

On the whole, the author provides a well balanced account of the existing evidence, distinguishing between what is well supported and what is speculative, pointing to areas where data are lacking or conflicting and outlining possibilities for further investigation. He deals sensibly with the problems posed by radiocarbon dates and disturbed sites. There will undoubtedly be details that are disputed by others working in New Caledonia and familiar with the material at first hand, but for other readers wanting a better acquaintance with the prehistory of this major Melanesian island group this is valuable book indeed.

In addition to a thorough review of the ceramic sequence and associated artefacts, there is a wealth of information about structural sites - habitation sites with terraces and earth mounds, the monumental fortifications of Hnakudotit and Waninetit in the Loyalty Islands, and the huge extent of

garden systems, not only irrigated taro terraces, but structures associated with dry land cultivation as well.

On the other hand, it is clear that there are several major areas where archaeological evidence is in woefully short supply. The number of non-ceramic artefacts from secure contexts at all periods is staggeringly small, as is the amount of structural information from excavations. Faunal studies have been minimal. Much of the recent work has been in the form of small, hasty salvage excavations, often in sites already seriously damaged, particularly by the ubiquitous sand quarrying on the west coast in the vicinity of Noumea. Very little is known about the eastern coast of the main island (Grande Terre) at all periods and about the colonisation of inland areas. And the continued non-publication of full reports on key sites (as in other parts of the Pacific, including New Zealand) is a serious problem.

Sand has read widely in the literature of Pacific archaeology and throughout the book he makes a conscious attempt to place the New Caledonian evidence and issues in a wider Pacific context. Thus, in the chapter about possible pre-ceramic settlement, he presents some interesting arguments, based on current knowledge of wider regional prehistory, as to why it is perfectly possible and indeed likely that New Caledonia was settled before the Koné period, before concluding that there is at present no firm evidence in support of such settlement.

Many of the lesser issues Sand discusses are relevant to other areas: for example, how to define a Lapita site (as opposed to a site with a few Lapita sherds in it), the relationship between archaeology and oral tradition, and the extent to which archaeological techniques can answer questions most important to the indigenous people whose sites are investigated.

The major thesis is also of wide relevance. Sand is proposing that New Caledonia underwent considerable environmental change during the first millennium AD which was largely human induced; that population growth led to intensification and may well have led to the development of hierarchical societies, long before the arrival of Europeans; and that there was not only major population decline but extensive change in social organisation in the long period between first European contact in the eighteenth century and the beginning of effective census taking and ethnographic description of Kanak society. It is perhaps the social issues that are most intriguing. How can we reconcile the orthodox view of Kanak society with the archaeological

evidence of monumental structures and extensive field systems, both wet and dry, some of which seem to date back to much earlier periods?

The book is extensively illustrated, although the printing of many of the photographs is disappointing. Even so, the illustrations provide an excellent introduction to New Caledonian sites, pottery and other artefacts and will be very useful to archaeologists working in other areas and seeking comparisons in New Caledonia. The extensive bibliography points the reader to the more inaccessible New Caledonian literature. There are, however, at least a few bibliographic omissions and some proofreading slips in quotations from English sources.

This is a scholarly book, but in the preamble, the author permits himself to reveal something of his personal motivation. He is a New Caledonian, deeply devoted to his country and its people. His personal quest for 'le rayon vert' - the last ray of the setting sun - has infused his work and made it far more than an academic exercise, no matter how competent. New Caledonia is the better for it.

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