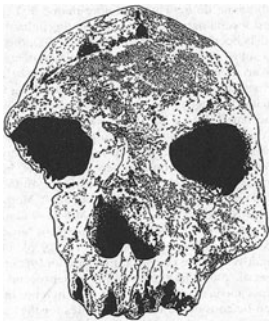
Book reviews

STEVEN E. CHURCHILL. *Thin on the ground: Neandertal biology, archeology, and ecology*. 2014. xvi+453 pages, numerous b&w illustrations and tables. Oxford: Wiley-Blackwell; 978-1-118-59087-4 hardback £100.



The hypotheses proposed to explain Neanderthal extinction are many and varied, ranging from those that postulate some form of competition, direct or otherwise, with *Homo sapiens*, to those that invoke abiotic factors such as climatic instability or cooling. Within archaeology, this topic is perhaps second only to the evolution of language in its ability to attract baseless theorising. From this maelstrom, Steven Churchill has extracted a series of the more viable threads and woven them into a compelling account that both clarifies previous research and adds new dimensions to the debate.

The promise of interdisciplinary synthesis in archaeology remains almost as common as the failure to produce it, yet with *Thin on the ground* Churchill fully delivers. The book marshals significant bodies of data—from archaeology, palaeoanthropology, genetics, ecology and climatology—yet remains accessible throughout. Rather than becoming lost in the diversity of the data necessary to appraise the debate fully, Churchill finds robust answers to questions that have surfaced again and again in the history of research into our close cousins. On the vexed issue of whether Neanderthals were cold-adapted, for example, he simply demonstrates that no alternative hypothesis could account for the evolution of such an energetically costly body form. This use of simple evolutionary logic, so often missing in archaeological discourse, is a recurrent theme of the book.

Churchill's central thesis is that Neanderthals existed at perpetually meagre population densities throughout their occupation of Europe: they were literally thin on the ground. Their energetically costly solutions to ecological problems led to relatively low rates of fertility; population increases were slow, bringing an attendant susceptibility to various stochastic forces. Furthermore, Churchill convincingly argues that Neanderthals were not the dominant faction in their regional carnivore community, and that competition with more efficient predators would have further restricted population sizes. The long-term effects of small and potentially fragmented populations would have included the inability to maintain cultural innovations such as the projectile technologies with which *Homo sapiens* entered Europe. The higher fertility rates, concomitantly larger and more extensively networked populations, and resultantly expansive toolkits of modern humans, combined to produce a package with which the Neanderthals could not compete.

The individual elements of this argument are not new, yet Churchill succeeds both in strengthening each and in synthesising them into a coherent and plausible whole. He recognises that there is no 'prime mover', no single reason for the demise of the Neanderthals; critically, he also recognises that few of the hypotheses put forward thus far are mutually exclusive. His treatment is accordingly both fair and extensive, intertwining the most useful elements of the existing literature. The sections on Neanderthal energetics are some of the most comprehensive I have read, and leave little doubt as to the nature of the Neanderthal adaptation. The energetically expensive Neanderthal strategy is set against a detailed picture of the climatic and environmental conditions in Europe during Marine Isotope Stages 6–3, demonstrating the costs of survival in very real terms. Throughout, Churchill employs comparative data from other mammals to strengthen his case concerning the ecological position of the Neanderthals, and to provide a much-needed context for the life of a large predator in Late Pleistocene Europe. This comparative approach, which recalls Foley's (1987) *Another unique species*, is a welcome departure from the still pervasive treatment of humans and hominins as being somehow apart from the other fauna with which they lived and interacted.

The use of the argument that population density and, importantly, interconnectedness are positive

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correlates of rates of cultural innovation and transmission is also widely used elsewhere. Churchill's treatment, however, provides both an examination of the ecological causes of low population density and an archaeological analysis of its ramifications. As such, it provides one of the more comprehensive groundings of what remains a largely theoretical argument. In this context, it is also pleasing to note Churchill's contention, supported by increasingly abundant evidence, that Neanderthals were cognitively capable of producing essentially 'modern' material culture, but that their population densities prevented them from doing so for long periods of time. The evidence presented for increasing archaeological site densities in the later Mousterian provides a viable explanation as to why the more impressive cultural and symbolic expressions of the Neanderthal adaptation occurred primarily during this period, when our own ancestors were already at the gates of Europe.

Thin on the ground will certainly not end the debate on the causes of Neanderthal extinction. As with any valuable academic contribution, it will do quite the opposite. There will be many who disagree with this particular take on the great Neanderthal extinction debate. Regardless of whether one agrees with Churchill's thesis, it is impossible to argue that it is anything but logically and rigorously constructed. The arguments of *Thin on the ground* are made on the basis of extensive evidence and considerable scholarship. This book should serve both as a comprehensive introduction to the debate and as a timely stimulus to new research.

Reference

FOLEY, R. 1987. *Another unique species: patterns in human evolutionary ecology*. London: Longman.

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GRAEME BARKER (ed.). *Rainforest foraging and farming in Island Southeast Asia*. (The archaeology of the Niah Caves, Sarawak 1). xx+410 pages, 279 colour and b&w illustrations, 60 tables. 2013. Cambridge: McDonald Institute for Archaeological Research; 978-1-902937-54-0 hardback £62.

This volume is the first of two that describe the results from fieldwork at the Niah Caves in Sarawak (north Borneo). The present volume provides an account of past human activity within the cave system, while the second will provide a detailed review of fieldwork from 1954–2004. As a cave with a well-preserved, well-dated and near continuous record of human activity spanning *c.* 50 000 years, the authors are able to interrogate burning archaeological questions about the human history of this region. A primary research aim is to re-examine the transition between foraging and farming, and the extent to which 'Neolithic' arrivals revolutionised the natural and cultural environment. Other research aims are to assess the antiquity of human activity in the wider region and to establish the extent to which Pleistocene human communities adapted to new rainforest environments. Although not specified as a research aim, the volume also examines the gradual emergence of behavioural modernity, including symbolic behaviour, throughout the Pleistocene and Holocene periods, as well as the nature and chronology of 'Neolithic' and 'metal age' human communities.

The preface and first two chapters provide context for the Niah Project, describing the site as: "a series of enormous—veritably cathedral-like interconnected caverns" (p. xvii), before exploring previous research at these caves and unresolved research questions for the region's (pre)history. The introductory chapters provide a wonderful—often whimsical—historical narrative, reinforced by excellent illustrations, about a largely undocumented period of archaeological research in Borneo. Genuine respect is shown for past researchers, whose data are integrated with skill and sophistication throughout the volume. Tom Harrison, who excavated at the site in the 1950s and 1960s, appears at the heart of many an outrageous story and is described by David Attenborough as "explorer, museum curator, guerrilla fighter, pioneer, sociologist, documentary film maker [. . .] arrogant, choleric, swashbuckling, often drunk, and nearly always outrageous" (p. 9)!

Chapters 3–8 provide results from the recent excavations (2000–2004) within the Niah Caves

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