Suzanne E. Pilaar Birch, ed. *Multispecies Archaeology* (London & New York: Routledge, 2018, 368pp., 60 illustr., 19 tables, hbk, ISBN 978-1-138-89898-1)

What an amazing book! Since being asked to review this volume I've raved to so many colleagues about it, recommended it to numerous research students for a whole variety of reasons, and ordered it with haste for the University library.

Many years ago, I wrote a book arguing for a rapprochement between archaeological science and archaeological theory (Jones, 2002). To be honest at the time my argument was made in hope, rather than expectation, that this would come about. Recent developments in archaeological science have done nothing to assuage my pessimism, though the pages of this book indicate that just such a rapprochement is possible. It is therefore a delight to see archaeological theorists rubbing shoulders with archaeological scientists in the pages of this book.

The book focuses on human-animal interactions. This has long been a topic of discussion in zooarchaeological circles as well as branches of mainstream archaeology (such as the study of the European Palaeolithic, Mesolithic, or Neolithic), but the contributors to this book borrow from a fertile strand of anthropological, philosophical, and critical thought in arguing for a multispecies perspective that re-situates humans not at the top of the ecological pyramid, but in a flattened hierarchy in which humans occupy the world alongside and with animals. The book explores this in four main sections: 'Living in the Anthropocene', 'Multispecies Ecology of the Built Environment', 'Agrarian Commitments: Towards an Archaeology of Symbiosis', and 'The Ecology of Movement'. The book contains twenty individual contributions and I cannot discuss them all here, but I will pick out some of the papers that really shone from this luminous collection.

One of the papers that exploded from the pages of this book was Chris Witmore's 'The End of the "Neolithic"? At the Emergence of the Anthropocene'. I have long had the nagging feeling that the Neolithic was where it all went downhill for humanity, and Witmore's paper argues this forcefully. He doesn't so much focus on the period archeologists know as 'the Neolithic' as on the long-term consequences of the agrarian practices that began in the Neolithic, focusing on the changing landscape of the Argive Plain, Greece and the environmental depredation caused by intensive orange growing for the global market. He then turns to the frankly terrifying landscape of Cattle City, Texas, a location where the deprived and exhausted landscape is geared entirely towards the production of prime beef. Amidst the environmental horror, what is wonderful about this paper is the way it weaves archaeological concerns with contemporary eco-political issues. Archaeology has often cocooned itself in esoteric debates, and it is wonderful to see archaeology being used as leverage for the discussion of the environmental and political issues that have the most contemporary urgency. It is my sincere hope that this paper is the start of a new trend in archaeological writing and research. More please!

As a counterpoint to the intensity of environmental depredation highlighted in Witmore's paper, Þóra Péttursdóttir's visually rich essay 'Drift' at first sight seems to be a restorative. Do not be deceived, as this essay also packs a punch. Péttursdóttir discusses a single beach, Eidsbukta, in northern Norway. Through a series of crisp black and white photographs and short accompanying texts, Péttursdóttir talks us through the series of tensions that occur along this stretch of landscape. She

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weaves together a discussion of how differing agencies, natural and human, shape the character of this landscape, showing how a series of forces play a part in the formation of the curious object assemblages that manifest on the shoreline. As she remarks: 'Things don't just add up. Thrown together the *nature* of Eidsbukta may or may not involve human agency, but cannot be tackled without considering things' own endurance' (p. 100, original emphasis). Péttursdóttir's text is marked out both for its superb turn of phrase, in which human things are components of a wider and complex ecology, and also for its photography which helps to convey her argument so well. As with Witmore, it is good to see archaeologists experimenting with new kinds of arguments expressed in new ways.

Gavin Lucas' paper 'Symbiotic Architectures' develops arguments he has previously made elsewhere regarding the enmeshed ecologies of settlement architecture. While he has previously experimented with organic metaphors for architecture (Lucas, 2013), here he shifts away from metaphor to quite explicitly discuss the organic. His focus here is on Icelandic vernacular turf houses, and his analysis takes in the turf and wood used for construction, wool, and the insect life that inhabit these structures. He builds up an argument for differing systems, hydraulic, ventilation, anthropic, and synanthropic (wild species that live in association with humans), combining to make up the ecology of the structure. This approach neatly traverses the distinction between animate and inanimate, and enables us to understand how human practices take their place in this complex architectural assemblage. The organic metaphor returns in a more concrete fashion, as Lucas argues for buildings in general, and turf houses in particular, as living architectures. By arguing this he aims to 'challenge the distinction between living and non-living things' (p. 115).

In a similar sense, Victor D. Thompson and Thomas J. Pluckhahn argue for a symbiosis between built architecture and organics in their paper 'Oysters and Mound-islands of Crystal River along the Central Gulf Coast of Florida'. Shells have long been recognized as components of the mound structures of Florida, though archaeologists have argued about whether these shells constitute architectural components or refuse deposits. From the investigation of the Roberts Island complex on the Crystal River they argue that the previous distinctions (architecture vs. refuse deposits) is unhelpful. 'Instead of viewing these places as static creations, they must be considered as part of a living landscape' (p. 166). The process of mound formation is important as is the way in which the oyster is enmeshed within local ecologies.

This sense of multispecies ecological process is also evoked in Ben Alberti and Severin Fowles' 'Ecologies of Rock and Art in Northern New Mexico', which discusses the complex agencies involved in the composition of Archaic period rock art in New Mexico. This paper also develops themes initiated elsewhere (Fowles & Alberti, 2017) regarding the multiple agencies that compose rock art imagery. While they note that humans, lichens, and weather may play a part in rock art location and images (particularly at the 'Kissing Fish' site), they also note how animals are enfolded in rock art images as natural signs (in the Peircean sense), noting how the depiction of tracks of deer co-exist with human tracks on some rock art panels, and how the depiction of deer tracks are also used to compose multistable deer-human footprint images on others. Remarking that 'rock art is as much ecology as it is art' (p. 151), their paper offers another cogent example of

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why rock art researchers need to abandon Western definitions of nature and culture, non-art and art, as they neatly argue for multispecies art.

An analysis of the relationship between humans and animals is foregrounded in papers by Kristin Armstrong Oma and Brian Boyd. Armstrong Oma ('Making Space from the Position of Duty of Care') discusses the entanglements between humans and sheep in Bronze Age Norway, while Boyd ('An Archaeological Telling of Multispecies Co-inhabitation') discusses humans, dogs, and gazelle (amongst other things) in Natufian Israel. Boyd's discussion very importantly emphasizes multispecies archaeology as a component of a wider multispecies anthropology; this literature also evidently motivates Armstrong Oma's analysis. Both authors (and Terry O'Connor, 'Animals and the Neolithic: *cui bono*?') focus on multispecies relationships as a way of troubling simplistic and well-worn narratives of development, such as the Neolithic 'revolution' (already thoroughly troubled by Witmore's contribution!).

The final section of the book focuses on movement. Oscar Aldred's 'Legs, Feet, and Hooves' neatly connects us with some of the discussion in Armstrong Oma's paper, as he discusses historic Icelandic sheep grazing round ups and the attendant movements of animals and people around the Icelandic landscape. Arguing for an understanding of human activity in these landscapes, he notes that archaeologists should focus on becoming *with* animals, a point also emphasized by Armstrong Oma.

In a wide-ranging paper ('The Rhythm of Life') Nick J. Overton discusses the various rhythms that make up the living world of Mesolithic Britain. His analysis brings into focus both human and non-human rhythms, particularly those associated with wild boar, beavers, and red deer. This deceptively simple (but actually highly sophisticated) analysis will impact how archaeologists discuss complex entanglements of humans-animals-plants-environments both for the Mesolithic and for other periods of history.

I've discussed only a handful of papers in this volume, however, one of the wonderful things about all the papers is the way in which the authors engage multiple strands of evidence (theoretical and scientific). In that sense the contributors enact the multiplicity of the complex assemblages that they seek to understand. Alongside this, we also see the political dimensions of these analyses emphasized in foregrounding the significance of archaeology for comprehending the environmental crises the world is currently undergoing. Once again, archaeology has been slow to engage with this discussion which has engaged scholars in the humanities, social sciences, arts, and sciences for many years. Archaeology has much to contribute to this issue and it is time that it entered the debate. I firmly believe this is the direction that the discipline of archaeology should be heading, and it is great to see the contributors expertly weave together the political and the academic, the critical and the scientific.

Finally, it is a shame that the book is hardback and retails at such a high price (£180, although it is available as an eBook at a lower price), as it deserves to be widely read. This is not a special interest book for zooarchaeologists. The messages it conveys deserve to be read by all archaeologists no matter their theoretical stripe or period interest. If widely read, the book has the potential to radically reposition the study of archaeology allowing us to embrace other agencies (animals, plants, weather, environment) alongside humans as components of the complex assemblages that we study; in my opinion this repositioning is long overdue.

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Peter Mitchell. *The Donkey in Human History: An Archaeological Perspective* (Oxford: Oxford University Press, 2018, 306 pp., 133 illustr., 32 in colour, 6 tables, hbk, ISBN 978-0-19-874923-3)

The last few decades have witnessed a growing interest in the study of human-animal interactions, especially in the humanities and social sciences. This movement, sometimes referred to as the 'animal turn' (Ritvo, 2007), has placed an increased focus on non-human animals and their practical or metaphoric function in human societies. While already in line with this trend, notably in *Horse Nations* (Mitchell, 2015), Peter Mitchell concentrates this time on an animal widely disregarded in the academic field and in society at large, the donkey. Through a wide interdisciplinary overview, he thoroughly portrays the major role played by this under-recognized animal in various aspects of the economic, social, and symbolic structure of human societies, from its domestication to today. This volume consists of eight chapters, structured chronologically, which follow the progressive diffusion of the domestic donkey from North Africa to the Near East, and then from Europe to its colonial settlements in America, South Africa, and Australia.

As exposed in the first chapter, Mitchell's purpose is twofold: first, to rehabilitate the donkey and demonstrate the role it had in many societies around the world over the last 7000 years. He thus brings to light the paradox of the historians and archaeologists' relatively weak interest in investigating the surviving traces of donkeys, hoping thereby to encourage research into human-donkey relationships to reach the same level as that undertaken for horses and camels, which have received more attention. Second, Mitchell seeks to tell a 'bottom-up' history through that of an animal of low (if not marginalized) status but highly integrated in daily life. The following chapters indeed show how the history of the donkey is highly connected to that of the poorest and most oppressed classes in society.

Chapter 2 goes back to the 'Origins' of donkeys. It traces the evolutionary history of the genus *Equus* until African and Asian wild asses diverged in the early Pleistocene. In this chapter, Mitchell presents their low dietary and water needs, and their ability to move through rough terrain, as key to enabling people to reach inaccessible areas. The question of

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