specifics of winter weather throughout the Greco-Roman world and helpfully provides modern data for the sake of comparison.

R. proceeds to focus on the issues of sea travel and military activity during winter in two separate chapters. The evidence for seaborne travel and trade during the winter months remains contradictory. R. argues that such voyages were deemed dangerous and only undertaken out of either dire need or for the purpose of significant economic gain. As a result, sea travel typically halted during the period from November to March, with the exception of the perennial trade between Rhodes and Egypt, and the winter monsoon route in the Indian Ocean. This raises the possibility that other, less-well-documented routes were also subject to their own seasonal dynamics. Military activity was also considered to be difficult during the winter months but on occasion was undertaken to gain the element of surprise. The gradual professionalization of the army in the Roman period marked a transition away from seasonal warfare, although such issues as logistics, winter quarters, and maintaining morale remained significant concerns during the winter. Only siege operations were on occasion deemed to benefit from winter weather.

In the final section, R. examines the impact of winter upon a wide range of everyday activities, including agriculture, fishing, hunting, trade, clothing, and housing. The idyllic image of the farmer resting throughout the winter that appears in certain sources is contrasted with more realistic evidence of the hardships of subsistence farming in antiquity. Hunting, fishing, and animal husbandry were also subject to seasonal limitations and variations. In the discussion of clothing, shelter, and heating, we glimpse the few measures that were available in antiquity for ameliorating the effects of winter weather. With many of these subjects, the scarcity of the sources limits the confidence one might have in broad generalizations.

While R.'s study provides an interesting and lucid summary of several important phenomena, it could have been improved upon in several respects. To serve as a reference work, the presence of an index and a listing of cited passages would have been helpful, as would a comprehensive rather than select bibliography. Although the issue of climate change in antiquity is briefly mentioned, R. fails to address the potential implications this would have for his rather ahistorical approach (p. 86). The incorporation of appropriate archaeological evidence would also benefit any study of climate in antiquity. By focusing on just the literary sources, R. straddles the divide between the historical experience of winter in antiquity and the conceptualization of that experience. One would hope that future attempts at what may be deemed environmental history advance beyond such a predominantly descriptive approach.

Columbia University Y. ZELENER

THE BONES OF GIANTS

A. MAYOR: *The First Fossil Hunters. Paleontology in Greek and Roman Times*. Pp. xx + 361, maps, ills. Princeton and Oxford: Princeton University Press, 2000. Paper, £12.95. ISBN: 0-691-08977-9.

There are a number of early Greek references to marine fossil shells. The early Greek philosopher Xenophanes (*c.* 570–470 B.C.) drew the conclusion from the observation of fossil shells found inland and on mountains that the sea must have covered what is now dry land (DK21A33). And Herodotus (2.12, 13, following Hecataeus of Miletus) drew a similar conclusion from the observation of seashells on the hills of the Nile

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Delta. Indeed, they began to make all sorts of conjectures on the possible age of the Delta itself. Historians of ancient Greek philosophy and science are, of course, well aware of these references and the rational conclusions drawn by their respective authors. On the other hand, historians rarely ask the question, did the Greeks (and Romans) ever find large vertebrate fossils of extinct creatures?

The classical folklorist, Adrienne Mayor, has consulted numerous ancient sources (albeit of less known writers) that make explicit references to paleontological finds of giant bones scattered around the Mediterranean and demonstrates that wherever the account is recorded, contemporary paleontologists can extract fossils that substantiate the original accounts. M. argues that the Greek and Roman fascination with giants and monsters was actually based on the observation of these giant bones. The big bones were treated as more than curiosities by those who found them; they were seen as evidence that giants once inhabited the Earth and that current humans were a lesser race.

Relying on literature, art, and archaeology, M. makes a number of intriguing suggestions. She compiles a good deal of material to show that the famous griffin (a panther-like bird) was a dinosaur called *Proceratops*. She argues that the legend was actually derived from the observation of the exposed remains of the dinosaur along trade routes in Asia. And to reinforce her conviction she shows an uncanny resemblance between the *Proceratops* and an artist's rendition of a prototypical griffin based on a Scythian nomad's description.

Elsewhere, M. contends that a vase painting depicting Heracles rescuing Hesione from the monster of Troy (*c.* 550 B.C.) is in fact the earliest artistic record of a fossil find (the monster appears to be the fossil skull of an extinct giraffe). Fossils are also linked to the legend of the Cyclops. M. argues (but she had predecessors on this) that the skull of the dwarf elephant (once widespread in the Mediterranean area) resembles a 'grotesque human face'; moreover, it has a large nasal cavity that could have been perceived as an enormous eye in the middle of the forehead (pp. 35–6). She also argues that fossils are linked to Hesiod's famous description of the Gigantomachy. This is all the more convincing according to M. if we consider that 'the geographical distribution of the fallen giants and monsters conforms to localized fossil beds discovered in modern times' (p. 195).

While it is clearly possible that the giant bones did in fact suggest (show?) that giants once inhabited the earth, it is worth noting that other cultures around the world (e.g. Norse fables) have equally colorful stories about giants and oversized humans without, or so it appears, being based on similar finds. Moreover, if giants were seen as the ancestors of present day humans, would this not suggest a notion of evolution? While the early Greek philosophers and historians were already well aware of a distant past (in large part because of the rediscovery of Egypt), the notion of evolution appears to have been quite foreign. In conjunction with this, there is no trace in Plato's cosmogonical account (*contra* M. p. 201) of a race of giants that preceded the race of humans. Moreover, when Plato in fact mentions the Cyclops in *Laws* 3.680b–d, there is nothing to indicate that he sees them as any more than primitive cave dwellers with human proportions. As for the relation between the story of the Cyclops and the elephant remains, what would have happened to the story of the Cyclops when real elephants and their skeletal remains were finally observed by as keen an observer as Aristotle? The fact that there is no reference to giant bones in Aristotle is a weakness in her theory in general (M.'s view is that Aristotle would have considered these giant bones as anomalies that could not be included in his classification).

M. also wants to make the case that the Greco-Romans deserve to be considered as

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the first paleontologists. However, even if one were to agree with her that there is indeed a correlation between the stories of giants and the discovery of big bones, there is nothing to indicate that the ancients were looking to extend their knowledge. They were simply making mythical conjectures (e.g. elephant skulls suggest Cyclops; human remains in caves suggest that Cyclops were cannibals). Clearly this is not what we generally understand by proof (*contra* M. p. 201).

But these criticisms should not detract from the overall value of the book. It is well written and referenced, and an excellent example of interdisciplinary work.

York University GERARD NADDAF

RELIGION IN THE POLIS

R. HÄGG: *The Role of Religion in the Early Greek Polis. Proceedings of the Third International Seminar on Ancient Greek Cult, organized by the Swedish Institute at Athens, 16–18 October 1992*. (Acta Instituti Atheniensis Regni Sueciae, series 8, 14.) Pp. 176, ills. Stockholm: Svenska Institutet i Athen, 1996. SEK 250. ISBN: 91-7916-033-6.

This book follows the by-now familiar format for volumes from the Swedish Institute's conferences on Greek religion: twelve short papers by an impressive line-up of contributors are presented, each prefaced by a convenient English abstract (two papers are in French, the rest in English), along with a record of the conference programme and participants. The central theme is 'the formation and early history of the Greek *polis*, with special reference to the rôle of religion in this process' (p. 7), and indeed most of the papers keep reasonably well to this remit. Malkin looks at 'land myths' and 'territorial myths', both typical of the period of Greek colonization, but each articulating different aspects of human beings' relationship with the land they live in. Burkert tackles the problem of early temple-building, and its implications for our understanding of the formation of the *polis*. De Polignac examines another vexed issue, the supposed shift from 'private' to 'public' concerns reflected in offerings to the dead and to the gods in the eighth and seventh centuries B.C., his conclusions complemented by Houby-Nielsen's more closely focused study of offering-trenches in the Kerameikos. The next two papers turn to aspects of ritual, Graf proposing a dichotomy between centripetal and centrifugal *pompai*, each fulfilling different religious and civic functions, while Brumfield discusses the interesting phenomenon of ritual obscenity in women-only cults. Four prohibitionary inscriptions, all from the Cyclades and restricting the access of *xenoi* to cult places or practices, are examined by Butz as possible vestiges of early *polis* regulations concerned with the definition of insiders and outsiders. Bremmer reviews the mostly literary evidence for the rôle and status of the seer, a figure whose fortunes appear to be closely bound up with the development of the democratic *polis*. Both literary and epigraphic sources are used by Clinton in his discussion of the Thesmophoria's status as a *deme*-administered festival, reflecting Athens' origins as a collection of smaller communities. Moving forward in time, Shapiro surveys the meagre evidence for religious life in Solonian Athens, examining the parallels in the tradition between Solon and Theseus as 'culture heroes' supposedly responsible for all kinds of positive developments in Athens' early history. The last two papers focus on narrower topics, Marinatos

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