

Civilized origins

Nick Saunders

Peruvian Prehistory. Edited by Richard W. Keatinge. Cambridge University Press: 1988. Pp.364. Hbk £35, \$49.50; pbk £13.50, \$15.95.

DOMINATED by the Andes, and flanked by the Pacific Ocean to the west and the Amazon rainforest to the east, Peru is a land of geographical extremes with an equally diverse and rich archaeological heritage. The accelerating pace of multi-disciplinary research over the past 30 years has resulted in a great increase in our knowledge and understanding of the region's prehistory, making a single-volume appraisal a difficult but worthwhile undertaking.

The book is organized chronologically, and the bulk of contributions deal with three main themes — Peru's early inhabitants; the development of complex societies; and the origins and spread of the pan-Andean Inca empire. Given the paucity and ambiguity of evidence before about 11,000 BC, the problem of dating America's first inhabitants has often degenerated into sterile argument between personalities. By concentrating on the better-known post-glacial Pre-ceramic period, between c. 9500 and c. 1800 BC, both Rick (the Andes) and Chauchat (the coast) avoid this pitfall to provide critical reassessments of previous, often confusing, views.

In the Andes, human occupation on a large scale was underway by about 8000 BC; in the high puna grassland, the evidence of lithic technology, available resources, seasonal mobility and the rock-art tradition all indicate that the inhabitants were hunter-gatherers. On the coast, at a time when both sea level and coastline were markedly different from today, a distinctive physical type of human population, the *Paijanense*, possessed tools and followed subsistence strategies based on the exploitation of maritime resources.

Despite the crucial importance of this sketchily known period, much more research and argument has centred around defining the roots of ancient Peruvian civilization. For decades the prevailing dogma has been that the famous Andean cult centre of Chavín de Huántar was the epicentre from which a feline cult swept through Peru between c. 1200 and 400 BC. Today the weight of evidence sees the origins of complex society as having a much earlier, coastal origin — during the Late Pre-ceramic and Initial phases, between c. 3500 and 800 BC. In her account, Fung Pineda shows that by c. 2800 BC centres such as Rio Seco and Aspero possessed an impressive array of

monumental architecture in the form of terraces, pyramids and residential areas. In her view, such sites were unequivocally the product of a politico-religious system controlled by a priesthood, millennia before the rise of Chavín. In his chapter on the Early Horizon (c. 800 to 200 BC), Burger drastically re-evaluates Chavín — he sees it as a significant but short-lived phenomenon, during which technologically precocious innovations in metallurgy and textile production made their first appearance.

From these beginnings, some of Peru's most striking civilizations evolved on the coast between 300 BC and AD 600. In a cursory review of this Early Intermediate period, Conklin and Moseley refer to the strong regional differentiation of the era, to the limiting bias of knowledge in favour of the iconography of such cultures as Moche and Nasca, and to the gap in our understanding of the cultural processes involved.

Better documented, if somewhat dense in style, is Isbell's account of the Middle Horizon (c. AD 600 to c. 1000) from the perspective of the great highland site of Huari. This prehistoric city of perhaps 20,000 inhabitants maintained a little-understood relationship with the great ceremonial centre of Tiwanaku on the shore of Lake Titicaca in Bolivia, and played a central role in the evolution of Andean civilization. Between its demise and the rise of the imperial Inca state, the

Chimú empire flourished on the north coast. Dominated by the metropolis of Chan Chan, the paramount concern of its bureaucracy was the control of hydraulic agriculture which gave Chimú society its characteristically rigid form and which culminated in the construction of the 84-km-long Chicama-Moche canal.

The increasingly thorough use of ethnohistorical data to test and complement archaeology is particularly well dealt with in the chapters by Morris and Netherly. Careful study of written records has helped provide a provincial view of the Inca state, has elucidated the nature of intra-valley relationships on the coast (often determined by competition for the coca fields) and has yielded valuable insights into the vertical economy of the Andes.

In *Peruvian Prehistory* we have the first collective assessment of the area's archaeology for a generation. The book is at times uneven in style and coverage, and thus less accessible than one might have hoped, and some of the views expressed have changed or have been superseded. Nevertheless, the authoritative and well-referenced contributions, together with clear maps and a reasonable price, make this a valuable and welcome publication. □

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Chance encounter

George Greenstein

Not by Design: The Origin of the Universe. By Victor J. Stenger. Prometheus: 1988. Pp.202. \$22.95, £16.95.

MOST of *Not by Design* is taken up with a whistle-stop tour through modern physics and cosmology, with a mild emphasis on recent theories of the early Universe. The scope of topics covered is wide, ranging from thermodynamics to atomic theory to elementary particle physics to cosmology. According to the author, the central thesis underlying this survey is that the design we have found in the cosmos in no way implies the existence of a designer (or, if one prefers, a Designer). No cosmic legislature ever promulgated the laws by which the Universe operates — its order, Stenger argues, has come about entirely by chance.

This is an important thesis, and one worth exploring. Unfortunately, however, the treatment Stenger affords it is far too brief, and although his account is provocative, and in places intriguing, it fails to touch upon many of the various ramifications of his thesis. Indeed, it is

only in the first and last chapters of the book that any real attention is given to the question. Only the briefest mention is made of self-organizing systems such as crystals, snowflakes and the like, and the manner in which order appears in the physical world. Nor is there any serious treatment of darwinian evolution, natural theology and the debate over the nature of order in the biological world that historically was of such immense significance.

The survey material, too, is inadequate. To my eye, at least, most of it is entirely unrelated to Stenger's central thesis, and would have stood quite well on its own. Furthermore, because the range of topics covered is so very wide, the coverage of each of them is correspondingly brief — Bohr theory is covered in two paragraphs, black holes in a page, Maxwell's unification of electricity and magnetism in three pages. The book is clearly intended for the general reader, but on occasion the discussion becomes so technical as to be comprehensible only to the initiate.

Certain errors and oversimplifications have crept in, both of a historical and a factual nature. For example, Stenger invokes Occam's Razor in relation to the copernican world-system, claiming that Copernicus required fewer epicycles, eccentrics and the like than Ptolemy to