

Without fully facing whether the universe will have a temporal end, Munitz goes on to argue that the universe is not just an existent: it is a Boundless Existent. Here the second major theme of the book comes into focus: that the universe can be known only incompletely. I recall a physicist friend arguing that if humanity could survive long enough, we would eventually learn all there is to know about nature, science would put itself out of business, and humankind would be "reduced to analyzing the plots of Japanese novels." Munitz's view (and mine) is entirely different. He writes:

There is consequently no reason to believe that the series of descriptions of the known universe will have a final stage (however long cosmological inquiry may be continued), a stage in which a perfect and complete model will have been realized that exhibits no bounds, poses no problems, and satisfactorily answers all questions. If by 'boundless,' in one of its senses, is meant 'endless,' then cosmological inquiry is fated to be boundless, since the means for carrying on such inquiry — the use of cosmological models — will always be conceptually bound.

In a final chapter Munitz makes clear that he is by no means setting up a philosophical case for theism based on modern evolutionary cosmology. His argument is only that "there is a dimension of Reality that is beyond all actual or possible conceptual analysis and rational comprehension". Munitz's God, if there be one, is unknowable; Boundless Existence tells us that our personal lives, our death, and the fate of mankind as a whole "are bathed in a sea of no meaning, no intelligibility, no hope, no fear".

As a theist in the familiar Western tradition, I find Munitz's arguments both challenging and unsatisfying. He makes a strong case against the simple material realism of much popular modern science in which divine reality supposedly has no place. Yet, just as he poises on the brink of finding meaning in the transcendental nature of the universe, he retreats to a "serenity of purposelessness". Silence is enforced by the utter impossibility of saying anything informative about Boundless Existence, he says; thus, by stating that the universe is without purpose, he has overstepped the bounds of his own logic. In any event, he goes on to assert that enlightened awareness of this transcendental quality can come through some sort of mystical experience. Just when I expected him to bring on the saints or gurus, the book ended. Nevertheless, he has argued brilliantly for the depth and thickness of reality, and as a distinguished theologian recently wrote to me, "I am sure that within that thickness and depth is religious reality, God". □

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Charting a course for the future

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The History of Cartography. Vol. 1: Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean. Edited by J.B. Harley and David Woodward. University of Chicago Press: 1987. Pp.599. £78.95, \$100.

THE history of cartography is not an old subject, but a relatively new one coinciding with the rise in self-awareness of cartography itself as a subject at the end of the nineteenth century. The present volume seeks to synthesize past scholarly work and present research on the cartographic or map-like endeavours of those societies which flourished around the Mediterranean and in the rest of Europe from the prehistoric period to about AD 1500.

This is an ambitious task, one which earlier writers on the history of cartography have normally eschewed on the grounds, as the geographer Max Eckert put it in 1925, that "too much of the groundwork is lacking".

There comes a time, however, when a subject needs to mature, to survey itself, to consider its weaknesses and strengths; this volume demonstrates that historians of cartography have reached that point. It will be the standard reference work on the subject and, even more importantly, by its revelation of lacunae in both our knowledge and interpretation will provide a platform for future research. Much of this research will have to be collaborative and international. The further five volumes of the project, which will take us into the twentieth century, and will include the history of non-European societies in Asia, are expected to follow the same open-ended pattern.

To praise a volume for demonstrating what is lacking may seem churlish at first sight. But indications of what still needs to be researched can be made only by contributors who are able to perceive some sort of historical pattern in their material.

Thus various general points emerge from the chronological chapters: for example, that prehistoric 'map-making' and modern indigenous or native map-making have been all too readily treated as totally interdependent; the prehistoric has often been divorced from its chronological stratum and the implication, from what little evidence there is, that the map-like drawings might have been an act of religious ritual rather than a record of space, has been missed.

Another contributor, O.A.W. Dilke, points out that the lack of a careful critical edition of the surviving manuscripts of Ptolemy's *Geography* remains an impediment



Far-flung places — the Cynocephali (top right), a race of dog-headed people thought to be associated with Islam, featured on didactic mappae mundi as prime targets for Christian missionaries. Detail taken from the Borgia map of c. 1430.

to our understanding of Graeco-Roman mapping — this in spite of the illuminating chapters on Greek and Roman geography by Dilke in the present book. His succinct account of the Romans' practical large-scale cadastral surveys, which were not equalled until the eighteenth and nineteenth centuries in Europe, is excellent.

It is also made clear that in the medieval period large areas of Europe were not mapped, but we still do not have union lists of all the surviving local and regional maps which would perhaps modify our views. The chapter on the origin and compilation of portolan charts (nautical charts of the Mediterranean sea) reveals that it was these instruments which were most widely sold and used in Europe, and that the chart constitutes the one major area where a new type of map was introduced in the period 1300–1500.

In general, the volume is spared what one commentator Youssouf Kamal, in the context of the origins of portolans, described as "hallucinations scientific", to which historians of such early periods of cartography are prone. The volume successfully places the map as artefact in the context of what the society concerned is assumed to have regarded as its uses — religious, geographical, administrative, cadastral, navigational — and does away with the monopoly of the interpretation of maps as merely 'scientific' objects. The gaps, the connections between mapping traditions and other questions may remain, but they can at least be formulated more easily within this well-researched and documented framework.

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