

Book reviews

Carbon Dioxide: Friend or Foe? by Sherwood B. Idso.

Pp xiii and 92 with 12 figures and 2 tables.

(IBR Press, Tempe, Arizona, 1982)

The battle scenario for this slim book is well and truly set by its title and the prolegomena which precede the body of the text. Sub-titled 'An Inquiry into the Climatic and Agricultural Consequences of the Rapidly Rising CO₂ Content of Earth's Atmosphere', its popularist style is reminiscent of works by Toffler, the Erlichs and Sagan. Each of its eight chapters is provocatively titled and preceded and concluded by equally provocative quotes, mostly from seventeenth and eighteenth century writers. A detailed notes and reference section follows each chapter.

Principally, Dr Idso's adversaries are the body of numerical modellers of CO₂ impacts on the climate system and those in high places whose judgment has been impaired by the dire consequences implied in the predictions of said modellers. The author pulls no punches in suggesting that the vociferous lobbying by the numerical modellers and their supporters may be prompted by the need for ever more funds to finance their expensive computing requirements or by a fear that the CO₂ problem may be shown to be nothing more than a scientific bogey.

One of Dr Idso's major complaints is that the possible benefits on agriculture of a raised level of atmospheric CO₂ are being overlooked, suggesting that we may in fact be 'making our way back to Eden'! Much of the author's own work on the subject has been carried out within this context; he works as a Research Physicist for the USDA Agricultural Research Service at the US Water Conservation Laboratory.

The debate on the CO₂ problem has already moved on from the point at which Dr Idso chose to mount his attack. The probable time of doubling has been pushed back several years and atmospheric scientists are listening to plant biologists (at least in Australia). On the other hand, there are some asserting that a CO₂ warming signal can now be detected in the climate record.

In summary, reading Dr Idso's book is akin to listening to one side of a debate being conducted by telephone. One knows that the other party is putting up counter arguments but unless the listener is familiar with the subject matter it is frustrating not to be able to hear them put forward. To be fair, the author scrupulously cites references for both sides and this perhaps is its main strength. Whether or not Dr Idso succeeds in setting the record straight (or

straighter as he puts it), or whether he actually bends it in another direction, readers may judge for themselves. There is a plethora of books and review articles available on this topic but the somewhat controversial approach of this effort makes it easier reading than most.

M. J. Coughlan

Climate, History and the Modern World by H. H. Lamb. (Methuen, London and New York, 1982.) Pp XIX and 387 with 120 figures and 11 tables. ISBN 0 416 33430 X

As Professor Lamb puts it, 'This book has presented history (and future environmental prospects) as the climatologist sees it'. Until recently explanations in history, especially social and economic, have neglected climate. Unapologetically Professor Lamb associates a host of past human activities or degrees of well-being to their climatic setting.

This fascinating book builds upon a lifetime of study of past climates. The author's encyclopaedic knowledge of the climatic patterns of geological, prehistoric and historic times has been previously presented in his two classic volumes *Climate: Present, Past and Future* (1972 and 1977). These volumes provided a rigorous scientific analysis of a vast field of work, particularly that published this century. In the present volume Professor Lamb allows himself to speculate more on the interaction over time between man and his climatic environment.

The book is not directed to meteorologists but to historians, social scientists and the decision-makers of the future. This is not a criticism. Indeed meteorologists and climatologists should find it intriguing and thought provoking. Inevitably the interpretation of human history cannot escape conjecture and opinion — the more so as evidence in earlier periods becomes more tenuous and incomplete. Historians and others will find the author's suggested explanations challenging and plausible though they may not always be willing to accept them. Professor Lamb makes perfectly clear his conviction that the influence of climate has been underestimated or neglected. Some might almost describe him as a climatic determinist, but he is by no means blind to alternative explanations. The final verdict may vindicate the climatic interpretation in some cases, yet leave it unproven in others. As a protagonist for climatic influences he makes a valuable contribution to redress the balance of assessment.

In the first part of the book the non-meteorological reader is introduced to the fundamentals of climate; the function of atmospheric circulation in energy exchange and in particular the role of the circumpolar westerly vortex and of anticyclonic blocking. The text deals next with possible causes of climatic fluctuations or changes. The discussion is not intended to provide a meteorological treatise but to offer an understandable treatment for the non-meteorologist of the past shifts and feedback situations in atmospheric circulation, ocean conditions or of solar radiation through astronomical cycles or changes in atmospheric turbidity, especially volcanic dust. This discussion is followed by an analysis of the diverse forms of evidence concerning past climates. Individually such evidence may be equivocal, but when a number of independent lines of evidence converge to the same conclusion doubts are often resolved.

The next and main section of the book correlates known details of past climates with human history from the time of early civilisations to 1950. Professor Lamb draws on his remarkable fund of knowledge about past climates. Much of the data refer to Europe, and more generally to the northern hemisphere. Few references, even at the end of the period analysed, deal with Australia or New Zealand, let alone South Africa or South America. In large part this unevenness is inescapable since information either does not exist or has yet to be assembled. The tantalising problems of the extent of agreement, or the teleconnections, between the northern and southern hemispheres are noted, but not examined at any length. This part of the book affords the non-climatologist with a comprehensive and well-digested statement of the scale and character of the variations of climate over time. The possible climatic causations of many historical events are advanced. The reality of climatic change cannot remain in doubt. The next task is for the historian to re-examine the situation in the light of such information and to consider if revised interpretations are in order.

The third section is concerned with the changed pattern of climate that different parts of the world have experienced since the 1940s to the 1960s. The possible causes for the fluctuation are examined and the question of climatic cycles is discussed. At this stage the potential effect of man's inadvertent modification of climate, notably the increasing amount of atmospheric carbon dioxide, is considered.

Various scenarios of future climates can be envisaged. Predicted orbital relationships of the earth and sun or the effects of volcanic eruptions may result in a cooling trend. More atmospheric carbon dioxide is expected to cause a warming trend. Which will dominate and for how long? In the 1970s increased climatic extremes have been experienced regionally. Is this the pattern for the near future?

The book is very well produced and error-free (but tropical cyclones do occur off northwest Australia, Figure 12). A very readable text is supported by a wealth of 120 figures and 11 tables. At times material tends to be repeated, but this is difficult to avoid when dealing from different viewpoints with complex interactions of events in time and space. An impressive range of sources has been used, but since no list of references, only a brief number of suggestions for further reading, is included and the index does not refer to authors, the reader must refer to the footnotes to the text to locate these sources.

The importance of climate to the understanding of human activity underlies the whole book. It should give confidence amongst climatologists in the justification for their studies. It brings the relevance of climatic data to historical analysis effectively to the attention of the social scientist. The book is strongly recommended to all who need to assess the significance of climatic change. It is a companion to, but a considerable extension of, such books as Bryson and Murray's *Climates of Hunger* (1977) and Schneider's *The Genesis Strategy* (1976).

John Oliver