

Climate of change

Alan D. Hecht

Weather, Climate and Human Affairs: A Book of Essays and Other Papers. By Hubert H. Lamb. *Routledge:1988.* Pp.364. £60, \$99.

AT A conference on "The Changing Atmosphere: Implications for Global Security", held in Toronto in June 1988, the prime minister of Canada, Brian Mulroney, and the prime minister of Norway, Gro Harlem Brundtland, called upon the international community to address the issues of global climate change, atmospheric pollution and their effects on society. These national leaders called for a "law of the air", or more broadly an international convention on climate.

The Toronto conference, and others that have taken place since then, demonstrate that the issue of greenhouse warming and climate change has expanded beyond the scientific community: it is now an issue for policy makers as well.

That climate is a factor to be considered in future social, economic and political planning would not surprise Professor Hubert Lamb, a pioneer in the study of natural climate change and its effects on society. Throughout his 30 years of pro-

fessional meteorological service, Lamb has done much to advance the fundamentals of meteorology and its links to the humanities.

Weather, Climate and Human Affairs contains 18 essays, some new, others originally published over the past 15 years but updated for this volume. In his introduction, Lamb explains the rationale for compiling the book: "Now that the study of climate and its development has emerged from long years of neglect, this relevance [of climate change to human affairs] is likely to be more widely appreciated than it was when the earlier papers in this book first appeared. Not all the items included here have been published before, and those that have appeared before were found in an inconveniently wide variety of sources".

This is not a technical book for research climatologists or meteorologists. Instead it is directed to a broader audience of scientists, environmentalists, and political and social planners who need to be reminded of the natural variability of climate, and who must address the problem of planning for future climate changes whether they are natural or man-induced.

I found most of the pieces on historical climatology (Chapters 1-12) a refreshing reminder of how human development is linked to climate change, and of how often historians and economic planners have ignored the environment as a factor in social and economic events. However, the remaining essays on climate change have weaknesses — Lamb's failure to make clear that the concerns over climate change have gone beyond carbon dioxide to a whole suite of greenhouse gases, including the chlorofluorocarbons and methane, means that many of the essays are out of date.

Lamb has also failed to update some of the essays adequately, or place others in proper perspective. Chapters 2 and 18 are good examples. In the article written for *Encyclopedia Britannica* in 1975 (Chapter 2), he writes that "it gives an introductory survey of the development of climate over the Earth from the last ice age to today". He concludes that "at present time natural fluctuations are still the dominant element in the Earth's climate system".

This may well be true, but detection of man-induced climate change is a hotly debated subject. Average global temperatures have been steadily rising for the past two decades. Four out of the past ten years have turned out to be the warmest in 150 years, and it looks as if 1988 will see a continuation of this upward trend. Long-term changes in precipitation across different latitudes are also consistent with model projections for greenhouse-induced climate change. Scientists are keenly arguing whether the greenhouse effect is reflected in these data, yet

Lamb's essays do not convey to the inexperienced reader the excitement of the contemporary debate.

Lamb himself is cautious in accepting evidence for greenhouse warming. In the acknowledgements, he asks his friends and colleagues not to be "dismayed by my limited acceptance of the fashionable carbon dioxide warming thesis, which looks so straightforward in the physics department but about which I believe there may be reasons for reservation in the wide world of atmosphere, oceans, soil and biosphere". In Chapter 18 he adds that "There are signs that the eager search in many laboratories for verification of the expected carbon dioxide caused warming of the climate may have been pressed too hard". And while he suggests that the increasing levels of carbon dioxide in the Earth's atmosphere should raise the world's temperature, he says the "effect may be smaller, perhaps very much smaller than is usually supposed". He even leaves open the prospect that a natural cooling trend, a return to ice age conditions, may balance man-induced global warming. Why such scepticism?

It is clear that Lamb is thinking about the role feedback plays in the climate system. There are indeed large uncertainties about the consequences of changes in snow and ice albedo and clouds in climate models. The ocean itself may delay or ameliorate the expected warming effect. But nowhere does Lamb deal with this subject, nor does he mention any possible positive feedbacks in the climate system which may result from the increased concentrations of methane in the atmosphere.

From the book it is clear that man has always lived with and adapted to climate change. Such lessons offer an opportunity for the public and governments to reflect on future adaptations and the implications of current societal goals and values. What is new is that mankind is now altering the environment in ways not previously imagined. Human-induced climate change is a global problem and will have to be addressed, in one way or another, by the international community.

As a measure of how fast the subject is developing, and how rapid has been the growth of political awareness, contrast the events described in the opening paragraph of this review with the concluding statement of the final chapter in Lamb's book: "At the time of writing it seems doubtful whether our politicians are as aware as the general public of the dangers and responsibilities implied [from climate change]". That, happily, seems no longer to be the case. □

Alan D. Hecht is Director of the National Climate Program Office, National Oceanographic and Atmospheric Administration, 11400 Rockville Pike, Rockville, Maryland 20852, USA.

ADVERTISEMENT

Reviews on IMMUNOASSAY TECHNOLOGY

Edited by S. B. Pal

Immunoassay techniques are continually being developed and refined, and applied in a broader range of uses. The books in this series comprise review articles and descriptions of methods of immunoassay, which are not reliant on radioisotopes, and reflect the growing importance of immunoassay technologies.

Volume 1.

October 1988 £37.50 256pp
234x156mm 0 333 452852

Volume 2.

October 1988 £37.50 216pp
234x156mm 0 333 46849X

Order these books through your bookseller or send your order to:

**Richard Gedye, Macmillan Press Ltd,
Houndmills, Basingstoke RG21 2XS,
UK.**