

THE FINAL EPIDEMIC:

Physicians and Scientists
on Nuclear War

Edited by Ruth Adams
and Susan Cullen

"An inescapable lesson of contemporary medicine is that when treatment of a given disease is ineffective or where costs are insupportable, attention must be given to prevention."
— from the introduction.

This book was written by distinguished physicians, lawyers, psychiatrists, scientists, and economists, and is the result of a series of symposia on the medical effects of nuclear weapons and war.

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attributable to climate as opposed to such non-climatic factors as the dislocations and readjustments in trade and industry . . . [p.31 of Wigley *et al.*].

In his own article, DeVries argues that we should shift the emphasis from "measuring the harm done" from some short-term climatic event to the study of "the process of adaptation" of societies to environmental changes over the long term. I could not agree more.

The issue of whether technology and social organization can increase or lessen vulnerability to climatic shocks or trends has been examined in several specific case studies by a Clark University team headed by the social geographer Robert Kates. A concise summary of their findings — and thoughtful accounts of the intellectual issues — make an appropriate last chapter to the Wigley *et al.* volume. (I say this in spite of some annoyance in seeing my own views taken too far towards the climatic determinist camp; I have never attributed the apparent increase of US grain yields in the period 1958–1973 as "primarily due to an unusual streak of very favorable weather", but rather have argued in several places that this period of "favorable weather" is largely responsible for decreased interannual variability in the absolute amount of US crop yields.) Although claiming no general conclusions, the Clark group is on the right track by mining specific examples for empirical information to test hypotheses under varying social and geographical contexts. I hope that this approach will be adopted by other researchers and applied to very different case studies.

Despite the padding of a good deal of unoriginal material, these two volumes do contain enough new and thoughtful information to make them indispensable to any serious student of the multidisciplinary topic of "climate and history" — or of the emerging discipline of "historical climatology", cited in the abstract of the piece by Sharon Nicholson. But I hope that future editors of such books will ask their authors to probe more deeply into the underlying intellectual issues. First, as I have already mentioned: to what extent has climate and climatic change influenced people and institutions? And second, perhaps more importantly: what can be learned from the past which might make societies of the future less vulnerable and more adaptable to the range of climatic fluctuations which physical science tells us is possible? In this connection it is disappointing that one such proposal put forward elsewhere by Rabb, in the context of assessing the social impact of CO₂, has subsequently been ideologically black-balled by US DOE administrators who took power in the Reagan administration. Despite the temporary setback to funding caused by such narrow-thinking, I believe that the study of adaptive mechanisms to deal with climatic change has such a high payoff that the emerging field of "climate

and history" may well soon become self-sustaining.

These two important volumes have not quite carried us into the territory of a new climate–history discipline; but if one is ever to emerge, I'll wager that these works will be regarded, despite their flaws, as foundationstones. □

Roles for centrioles

M.A. Sleight

The Centriole: A Central Enigma of Cell Biology. By D.N. Wheatley. Pp.232. ISBN 0-444-80359-9. (Elsevier/North-Holland Biomedical: 1982.) Dfl.190, \$88.50.

TEXTBOOKS of cell biology refer to centrioles as small bodies that act as foci for mitotic spindle formation in animal cells; many proceed to indicate that centrioles may also act as ciliary basal bodies. In *The Centriole*, Dr Wheatley examines the evidence for these and other beliefs and generalizations. He concludes that although centrioles are essential for the formation of cilia or flagella, we have little understanding of any role for them in the mitotic spindle.

Experimental studies with laser-irradiated cells, and observations that the mitotic spindle of cells of higher plants, yeasts and many fungi lack centrioles, show that centrosomes are necessary for the formation and correct functioning of the spindle, but that centrioles are not essential components of centrosomes, although they may be present. One might add that ciliates lack spindle centrioles although they possess numerous ciliary "centrioles".

Many interesting questions are raised in the book — the bipolar nature of mitotic division; the origin, nine-fold symmetry and *de novo* appearance of centrioles; the nature of the centrosome; the production and role of the primary cilium present on cells of almost all tissues in the mammalian body; the concept of microtubule organizing centres; and the probable absence of DNA and likely presence of RNA in the centriole. Discussions of these and many related topics are supported by well-selected references, and the summaries at the end of many sections are especially helpful. The result is a thought-provoking and interestingly-written series of essays.

Although the abbreviated index, poor proof-reading and lack of scales on many micrographs are regrettable, the book is certainly recommended reading for specialists concerned with cell division, microtubules or cilia. □

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