How the Weather Affects your Health

The National Environment Protection Measure for Ambient Air Quality (the Air NEPM) estimates that in Australia there are 2,400 deaths per year as a result of particulate matter pollution. This is more than the annual road toll. It is also an indication of how weather (in the broadest sense) can affect your health.

This readable and interesting little book deals with weather in the broadest sense. The cover lists asthma, global warming, photo ageing, arthritis, electromagnetic radiation, skin cancer, migraines, heat stroke, eye disorders, weather sensitivity, blood pressure, heart and circulatory diseases, seasonal affective disorder and pollution.

According to the book, 'up to 60% of Germans claim to be weather sensitive but only 30% of Americans do, and hardly any citizens of other countries.' This certainly accords with my experience. If I examine my own bookshelf, the only other book that I own related to the topic is Medizin-Meteorologie nach den Wetterphasen by H. Kügler, published in Munich in 1975. The two books differ markedly. Kügler's is a short, 122 page scholarly work aimed at the medical profession. Kaiser's is a short, 180 page popular work aimed at a general readership.

Kaiser's book is divided into seven chapters: Bioweather, Weather Sensitivity, Air, Heat, Cold, Sun, and Violent Weather. Kaiser lives in country Victoria, and the book is published in Melbourne, so that it deals with Australian issues. A careful reading also highlights how far behind we are in certain areas of biometeorology. The recently published 2001 State of the Environment Report's Atmosphere Theme Chapter points out that 'Australia has now become the "hay fever capital" of the world...with over 40% of young adults suffering the symptoms of a runny nose and itchy eyes'. We know that pollen from grasses and trees is primarily the reason for this, yet, despite the importance of pollen counts as an indicator of the health of susceptible Australians, there is little regular, ongoing, monitoring of pollen counts in Australia and the little that there is, is centred on Melbourne. Thus Kaiser is forced to present northern hemisphere pollen counts.

The contents of the book exhibit a wide-ranging and comprehensive account of weather and health. I was particularly interested to see that Kaiser included 'Vibration White Finger' (VWF) in his effects of cold, though he did not use this term for it. His description is that 'some users of vibratory tools, such as pneumatic hammers and chain saws, can develop the disease – especially when the tools are handled in cold conditions'. The disease in this case is Raynaud's disease, a circulatory disorder that causes the fingers to turn a deathly, waxy, white. My interest stems from a personal belief that we are due for an epidemic of VWF as a result of the general population's widespread percussion of their fingers on computer keyboards.

The popular style of the book means that the author makes magisterial pronouncements, but there is no citation to their source. The tendency to such pronouncements can be disconcerting. The statement 'In Australia, thunderstorms are more damaging than cyclones, floods or bushfires' seems surprising at first blush. It arises because of the enormous damage, and the resulting enormous insurance claims, that arose from the 1999 Sydney hailstorm. To realise this, the reader will need to be astute. The description of the Sydney hailstorm is not linked to the statement, or vice versa.

There is an impressive bibliography at the back of the book, but being a general bibliography, it is not tied to particular chapters. I would have liked to be able to follow up some of the statements in the book such as:

'Patients who have had a heart attack are susceptible to weather sensitivity, sometimes extremely so. The rate is three times higher than it is in persons who never had a heart attack.'

'...the numbers of patients with hay fever are greater in cities than they are in rural areas.'

'The World Health Organisation warns that vaccination programmes in populations with high UV radiation exposure can be ineffective.'

I found the book to be interesting and useful reading. Just once in a while I found that the writing style intruded. For example, to say that Europeans have föhns winds, Americans have chinooks, Israelis have the sharav, and Australians have 'easterlies, westerlies, or northerlies, depending on which part of the coast they live' may be correct but may also be difficult for the casual reader to comprehend.
The only technical issue on which I would disagree with the author relates to his description of an ‘Australian Air Quality Index’. There is no such thing. Air quality, being a State responsibility, is handled State by State. Various Australian environmental agencies have established their own air quality index. Australian States are presently aligning their indexes to the Air NEPM Standards, but definitions differ nevertheless.

In New South Wales, an index of 50 is taken to represent air that has at least one component at the Air NEPM concentration, whereas in Victoria and Queensland the same occurs when the index reaches 100. Further, some States extend their Index to include additional measures to the Air NEPM: for example, including a measure of visibility such as Bsp or visual distance. The definitions for three States may be found on the Web at

In the greater scheme of things these are very minor quibbles. I liked the book and found it informative, and suspect that others may also like it and find it informative.

Tom Beer

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The Pew Center on Global Climate Change is a US think-tank dedicated ‘to providing credible information, straight answers and innovative solutions in the effort to address global climate change.’

In an effort to contribute to this objective the Centre has produced a handsome volume called Climate Change: Science, Strategies and Solutions comprising twenty-two papers running the gamut of subjects related to climate change. In short order, these comprise the following: the ‘science’, several chapters on impacts, reviews of national responses to climate change, a set of papers on the economics of climate change, five case studies under the heading of ‘innovative solutions’ and two chapters under the theme of current developments.

It is almost impossible to provide a technical review of all the material in the volume; to do that requires the services of a climate change polymath, familiar with the latest developments in a bewildering variety of fields from climate modelling to economics and policy.

One feature of the book is that it is clearly intended for a US audience, so the treatment of the underlying science by Tom Wigley and the three subsequent chapters on sea-level rise, impacts of agriculture and water resources focus on the US. This makes the book less useful for Australian readers unless they are specifically seeking an assessment through a US lens. A similar comment could be made about most of the other sections of the collection.

The treatment of the underlying science of climate change by Wigley sets the context for the subsequent papers. Readers of the Australian Meteorological Magazine might choose to skip over the first three chapters and instead read the IPCC technical summaries or read the relevant parts of the IPCC Third Assessment Report. However for non-scientist readers or those wishing to gain a brief overview of the science and some perspectives on impacts in the United States, the first part of the book serves that function.

For those seeking insight into the way different nation states are responding to climate change the three papers on greenhouse policy are useful. I found the account of the Japanese response particularly informative because gaining a clear view of the Japanese approach to addressing climate change is not straightforward. Emissions related to the provision of electricity in five major developing countries are also considered. While superficial in some respects this paper is an important one. Deeper investigations of the ways in which developing countries might contribute to greenhouse objective warrant more attention.

The case studies at the penultimate section of the book are perhaps the least convincing part of the overall presentation. I suspect the sub-text of the paper is intended to be ‘you too can do something about climate change; look what’s happening here.’ However I found these studies neither particularly innovative nor outstanding. For example, if one were to look at action taken by States in Australia, the electricity dis-
tributor benchmark scheme soon to be introduced by the New South Wales Government is as innovative as anything covered here. Similarly, one can find a wealth of local government action in Australia often, but not always, catalysed through the Cities for Climate Protection Program.

For me, the six papers looking at economics comprised the most interesting and worthwhile section of the book. The papers worked through the basics of economic analysis of global climate change, how economic models work, the influence of technological change on mitigation costs, emissions trading and greenhouse mitigation from a company perspective. The papers are clear and accessible to a non-economist. No doubt one could quibble over the selection of material contained within then, but they certainly provide insight into how economists approach the climate change issue.

Overall the volume is mixed. I suspect its production values — glossy paper, full colour figures and strong design — exceed the intellectual value of the contents. Nonetheless there are interesting papers within worth a browse. The strength of the collection is that it touches on many areas of climate change, so the reader can easily sample the breadth of climate change research without the need to hunt down reviews in a myriad of other sources. I would be unlikely to buy the book for my personal library, but would certainly look at it if it were on library circulation.

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