

## Book reviews

**Climate Data and Resources: A Reference and Guide\*** by Edward Linacre (Routledge, 1992) ISBN 0-415-05702-7. \$49.95.

In his preface Professor Linacre suggests that his latest book, *Climate Data and Resources*, is 'a broad survey . . . helpful to students, meteorologists, engineers, planners, builders, farmers — in fact any one with a problem involving the climate'. Arguably, the book is more than a helpful survey, it is a true reference and guide as the subtitle suggests.

*Climate Data and Resources* is made up of two almost equal parts. Part I of 143 pages on Climate Data covers four chapters; Part II of 165 pages on Climate Resources covers three chapters. The text is well supported by figures and tables, 30 pages of notes, 15 pages of references, and a ten-page index.

The Introduction puts the science of climatology in perspective. Professor Linacre resists the temptation to define climatology narrowly, suggesting it is closely connected with meteorology and the subjects are parallel but different. Given the quoted French and Russian views that meteorology is a subsection of climatology this is probably a wise approach. The notable events listed in the History of Climatology are in step with developments of science in western civilisation, particularly in the seventeenth and eighteenth centuries as measuring techniques improved. The Introduction also considers standard units of measurement.

Chapter 2 examines the important topic of measurement of climate data. The climate station, its location, exposure and maintenance are the foundation of a climate record. It is suggested that attention to these facets is required to minimise errors and ensure that measurements actually represent the climate element. This cannot be emphasised too strongly. The chapter also looks at special factors relevant to temperature, humidity, wind and rainfall.

Climate data are not always available where they are wanted for applications. Chapter 3 looks at methods of estimating climate data. Some of the methods are not rigorous, or they have wide error bars. Such methods should only be used with caution as a first order estimate.

Analysis of sets of climate data is discussed in Chapter 4. Use is made of statistical methods but the chapter is not a text on statistical methods.

However, many useful rules and guides are given.

Solar radiation is covered fully in Chapter 5. These 55 pages are justified given the emergence of solar radiation as an alternative energy source, its importance for determining the relative thermal efficiency of buildings, and its role in biosphere productivity.

Wind is also an important climate parameter that can be harnessed as a resource and is variable in space and time. It is covered in Chapter 6. The discussion treats local circulations, including diurnal variability, vertical profiles and the estimation of extremes.

Finally, Chapter 7 treats rainfall. There is a brief description of rainfall mechanisms and global patterns of rainfall. More attention is paid to spatial variation of rainfall and estimating catchment rainfall. There is reference to such influences on rainfall as sunspot activity and the El Niño and Southern Oscillation phenomena. Intense rain periods and estimation of storm rains are covered. Difficult measurement problems, such as for dew and snow, are treated also.

The Notes to the chapters give important details or methodologies that would otherwise interrupt the flow of discussion if included within the chapters. The large number of examples that illustrate methodologies, etc. are drawn from diverse geographic regions including all continents.

*Climate Data and Resources* is a very complete reference and guide to climate, particularly as it has been practised over the latter half of the twentieth century. An understanding of these concepts is essential for any professional intending to utilise climate data or information.

A weakness of the treatment, however, is the limited discussion on the impacts of automation on climate observing. The trend towards automatic recording systems has accelerated over the past decade. Some elements are readily compatible with this technology while others are not and the range of routinely measured climate elements is likely to change as economic considerations set the agenda of meteorological observing policy. An assessment of the impact of this trend would have been an important contribution.

In summary, Professor Linacre has provided a valuable in-depth survey of how climatology has developed and the stage that the science has reached. The book should be readily available, preferably on a personal bookshelf, wherever professionals work with or apply climate data.

**Bill Kininmonth**

*Bill Kininmonth is head of the National Climate Centre in the Bureau of Meteorology.*

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**Climate in Human Perspective** edited by F. Baer, N.L. Canfield and J.M. Mitchell (Kluwer Academic Publishers, 1991) ISBN 0-7923-1072-1. \$US59.00.

I only heard Helmut Landsberg speak twice, and these two occasions were towards the end of his long, widely honoured career in climatology. The first time was during the Ninth World Meteorological Congress when he was one of the invited scientific lecturers and spoke on 'The value and challenge of climatic predictions'; the second was at the Dinner of the First International Conference on Monthly and Seasonal Atmospheric Variations over the Globe which I had organised as a World Meteorological Organization officer in the Research and Development Programmes Department. The Conference was held at the University of Maryland in 1985 in conjunction with NOAA's Tenth Climate Diagnostics Workshop. Landsberg was guest of honour that evening and I was fortunate enough to sit between him and his delightful wife. Even then, towards the end of his life, he was an extremely impressive, and at the same time, courtly gentleman.

Within a few months of that dinner, Landsberg died, in the saddle so to speak, while participating in the ninth session of WMO's Commission for Climatology — a body which he had been instrumental in establishing at the time when WMO was being created from its non-governmental predecessor, the IMO, and to which he devoted considerable effort for the rest of his life.

Our host at that dinner in 1985 was Ferd Baer, the first editor of this book. He and his co-editors — Norman Canfield and J. Murray Mitchell —

have created a fitting tribute to Landsberg's memory. The book contains a collection of the dozen or so papers originally scheduled for presentation by their distinguished authors at a scientific colloquium on climate planned to be held at College Park to honour Landsberg's 80th birthday in February 1986. Instead, the symposium was rescheduled as a memorial symposium.

The eminence of the contributors to this volume, and the breadth and depth of their topics (Baer: Overview; Canfield: Bibliography of published scientific works by Helmut E. Landsberg; Driscoll: Biometeorology; Haggard: Climate services; Ludlum: The climatology of America; Malone: Helmut E. Landsberg: towards AD 2000; Mitchell: Five themes on our changing climate; Oke: Climate of cities; Smagorinsky: Climatology's scientific maturity; Taba: The Bulletin interviews: Professor H.E. Landsberg; and Thomas: The foremost climatologist in the world) have ensured that it is indeed a fitting tribute to one of the greatest meteorologists of the century.

I particularly enjoyed recalling Landsberg's early recognition of the potential for human influence on climate and his call for the monitoring of atmospheric composition and radiation balance at sites remote from concentrations of population — now being fully established under the aegis of WMO's Global Atmosphere Watch; and reading again of his almost notorious, but nevertheless very serious, 1962 paper 'A note on bedroom climate'.

This book should be in the library of every meteorological and related institute.

**P. Price**

*Peter Price is Executive Editor of this journal with a long interest in the general circulation and climate studies.*