price of US$247, this volume is unlikely
to appeal to individual researchers, who
are more likely to seek out papers of
interest in a library copy. However, in
these days of shrinking library budgets
and rising journal subscription prices, it
also questionable how many libraries
will be willing to expand their collection
of proceedings from this otherwise
potentially valuable conference series.

REFERENCES
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Durrell, L., 1953, Reflections on a Marine
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Climate Change: A
Multidisciplinary
Approach

by William James Burroughs
Cambridge University Press
40 West 20th Street, New York, NY
10011-4211
2001, 298 p. Paperback US$29.95,
Hardback US$85.00
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This small, readable, and useful volume
on climatology and climatic change is
aimed at the educated non-specialist.
This is fortunate, for it is a
comprehensive overview and we are all
non-specialists for many of the topics
discussed. The chapter headings are as
follows:
1. Introduction
2. Radiation and the Earth’s Energy
Balance
3. The Elements of Climate
(atmospheric and oceanic circulation)
4. Evidence of Climate Change
(geological and historic climatic change)
5. Consequences of Climate Change
(from sea levels to the spread of disease)
6. The Measurement of Climatic
Change (a review of data sources from
pollen analysis to satellites)
7. Statistics, Significance and Cycles
(mathematical techniques for
understanding the climatic evidence)
8. Causes of Climatic Change (from
autovariance to human activities)
9. Modelling the Climate (The essential
features of computer climate models
and their ability to replicate climate)
10. Predicting Climate Change (natural
fluctuations and human induced change)

Burroughs appears to have
designed the Introduction as a filter to
exclude the uncertain, rather than to
attract the reader to topics in
climatological and climatic change. An
ancedotal and historical introduction to
climate change could have provided a
more enticing entrance to a fascinating
subject. Instead, a battery of graphs
establishes concepts in climatic
variability and climatic change.
However, this chapter serves as a
warning; if you want a superficial
measurement of the subject, or are allergic
to analysis, do not read on.

The strength of the book is in
Chapters 2 to 10, where the subject is
developed from the essentials of the
earth’s radiation balance to a discussion of
possible future climatic change.
Burroughs is clearly most comfortable
in the physics of climate and the volume
maintains a rigorous, numeric approach
to the topic. The diversity of topics
considered is commendable.

Only a small portion of
the volume, Chapter 4, dealing with the
evidence of past climatic change, is of
particular interest to geologists. His
treatment touches on plate tectonics and
“Snowball Earth” to “The Little Ice
Age”, including a figure illustrating
sequence stratigraphy. Most of the
discussion focuses on the Pleistocene
and Holocene, with a critical dissection
of the evidence. Anyone who has
experienced the vast gulf in thinking
between a modern climatologist, who
considers a 300-year series a climatic
average, and a paleoclimatologist, for
whom decadal resolution would be very
high resolution, will appreciate how well
Burroughs writes in both areas.

Heartening to a geologist is his
firm statement of the value of the
geological record. He writes, “In terms
of current concerns about future
changes in the climate, these
[geological] changes seem immeasurably
slow and hence of little relevance to
contemporary issues. This view is short
sighted. An understanding of longer
term changes not only sets current
events in context, but also identifies the
importance of different components of
the global climate...So the more we
know about what has happened in the
past...the easier it may be to appreciate
the questions that need to be answered
today” (p. 74).

Burroughs shows good scientific
balance in the presentation of
disturbing topics, emphasizes
uncertainties, and is commendably
restrained in conclusions. For example,
he does not press the (enticing) case for
a climatic influence in human evolution,
noting that the topic is “...an
intellectual snakepit...” (p. 121).

Considering the current Kyoto
Accord controversy, Chapter 10,
“Predicting Climate Change” is
especially relevant. Burroughs
comments: “The cozy notion that
warming will simply produce a gradual
displacement of climatic zones to higher
latitudes, so England will eventually have
a climate like southern France, is
probably a gross oversimplification”.
What will matter, but is not known,
is whether there will be a significant shift
in the occurrence of weather regimes.
Regarding the much maligned general
circulation models, he points out that,
in spite of their limitations, there is no
alternative to these tools to try to
understand the climate and possible
human impact.

Many figures are attributed to
Intergovernmental Panel on Climate
Change (IPCC) reports, which have
brought together and synthesized work
from diverse fields. Capable as he is,
Burroughs would not likely have been
able to bring this volume together
without the use of IPCC reports. We
have now had the 3rd IPCC report.
Perhaps this volume will be updated to

Several of the half-tone figures
are of poor quality or are outright
muddy (Fig 8.1, p. 209 showing the
dust cloud distribution after the
Pinatubo eruption). In spite of this flaw,
this is a commendable book, and in soft
cover, at a price that students deserve.