

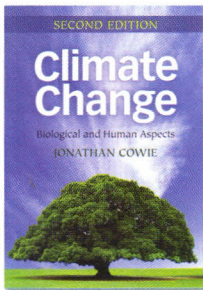
compressional tectonic inversion at the onset of orogeny in the Ardenne Slate Belt. Main *et al.* consider the dilatancy-diffusion hypothesis and the flawed search for earthquake predictability.

Overall, this is an excellent and recommended 2012 account of how Andersonian and other factors control faulting and its orientation, with a good spread of geographical and geological situations and modelling. Had it included the outstanding 2012 paper on 'Granite magma migration and emplacement along thrusts' (Ferré *et al.* Int J Earth Sci [Geol Rundsch] 101, 1673–88) it would even have justified its title!

Reviewed by Bernard Elgey Leake

FAULTING, FRACTURING AND IGNEOUS INTRUSION IN THE EARTH'S CRUST

D HEALY, R W H BUTLER, Z K SHIPTON & R H SIBSON (Editors), 2012. GSL Special Publication 367. ISBN 978-1-86239-347-9 (hbk). 253pp **List Price £85.00, Fellows' Price £42.50** www.geolsoc.org.uk/bookshop



Climate Change: Biological and Human Aspects

Read this book and gain a new perspective on climate change. This is above all an interdisciplinary topic, and hard to grasp in all its essentials by those of us brought up in the old-fashioned 'single discipline' mode of instruction. Few people have put together in such a compelling and reader-friendly way the full extent of information about climate change and its effects, ranging all the way from changes with geological time to real or potential impacts on human health and welfare and on plant and animal life.

The United Nations Environment Programme (UNEP) cited the first edition of this book (2007) as one of the top climate-change science books of the 21st Century. This second edition has been fully updated and substantially expanded, with major updates on climate impacts on early societies, and on biological impacts; updated graphs on energy production and consumption; new sections on climate

thresholds, the Kyoto II conference, and the climate policies of Canada, Australia and NZ; and an Appendix with further thoughts for consideration to stimulate discussion.

This is an educational tome, suitable for the scientifically literate layman, high school and undergraduate students, as well as policy makers. Chapter 1 introduces the topic and its differentiation from weather. Chapter 2 is a useful primer on the modern approaches to measuring past climate change. Chapter 3 takes the reader on a useful tour of climate change in the Earth's 4.6 billion-year history. In Chapter 4, Cowie focuses on climate's links to biology, from the Oligocene through the Pleistocene Ice Age and right up to the Holocene.

In Chapter 5 he moves into the Holocene and present climate. Chapter 6 considers current warming and its biological symptoms, ending with a review of possible surprise responses to further global warming. In Chapter 7 we learn about the human ecology of climate change, and the nature and possible manipulation of photosynthesis in the interests of mitigating the problem. In the final Chapter, Cowie documents the development of environmental policy at the international level since the UN Conference on the Human Environment in 1972. He goes on to look at future energy options, and concludes by considering how humans may adapt to further climate change. No matter what we do, Cowie concludes, the biosphere will remain.

This is an invaluable, readable and well-referenced guide to where we are now, how we got here, what is happening now, what may happen next, and what we can do about it.

Reviewed by Colin Summerhayes

CLIMATE CHANGE: BIOLOGICAL AND HUMAN ASPECTS JONATHAN COWIE, 2nd Edition. Published by Cambridge Univ. Press, 2013. ISBN 978-1-107-60356-1. 440 pp. **List price: £34.99** www.cambridge.org.

REVIEWS: COPIES AVAILABLE

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■ **NEW Natural Disasters in a Global Environment** by Anthony N Penna and Jennifer S Rivers. Wiley Blackwell 2013 340pp sbk