

exist between geocryology and glaciology and the research potential in this field.

The Special Publications of the Geological Society are notable for their high standards of presentation and publication and this volume continues that tradition. The individual papers are generally well written and the quality of the reproduction of diagrams and photos used throughout is, with only one exception, excellent. The use of colour in the paper by Etzelmüller & Hagen on glacier–permafrost interaction in Arctic and Alpine mountain environments demonstrates its effectiveness and it is a shame that more use of colour could not have been made throughout. That said, most of the black-and-white photos are excellent. In conclusion, although perhaps not fully comprehensive, this volume highlights the strong links between glaciology and geocryology, and I would recommend it to those researchers interested in the cross-over between these two fields.

Colm Ó Cofaigh

HISCOCK, K. 2005. *Hydrogeology. Principles and Practice*. xvi + 389 pp. Malden, Oxford, Carlton: Blackwell Publishing. Price £34.95 (paperback). ISBN 0 632 05763 7.

doi:10.1017/S0016756806263052

The science and application of hydrogeology continues to grow apace and hence new textbooks are always welcome on our bookshelves to sit alongside the pioneering 1970s classic *Groundwater* by Freeze & Cherry, and various texts since. *Hydrogeology: Principles and Practice* will, I predict, find an honourable place on many a bookshelf. It is a comprehensive hydrogeological text that lives up to its title of providing a thorough treatment of not only the principles, but also the practice of hydrogeology. Dr Hiscock has clearly spent significant effort drawing together many case studies, largely set in text ‘boxes’ within his book, that provide excellent practical illustration of the principles taught. It is the diversity and high quality of these case studies drawn from all over the world that set this book apart from other texts. The book covers most aspects likely to be addressed in many undergraduate hydrogeological courses and will provide a foundational general text for postgraduate courses to be used alongside more specific hydrogeological texts. Practising hydrogeologists will find it a welcome refresher and useful resource.

Following the internationally relevant introduction, early chapters explain the fundamentals of physical and chemical hydrogeology. These are followed by chapters on environmental isotope hydrogeology, a specialist area of the author, and groundwater investigation that largely concentrates on physical hydrogeological aspects. All these chapters are well written with interesting cases, many of which have not been published in previous textbooks. Subsequent chapters cover the ever growing areas of contaminant hydrogeology and groundwater remediation and protection. Whilst these provide a comprehensive overview of these subject areas, they lack a little on detailed principles in some areas. Individual more detailed chapters on inorganic and organic contaminants would have been perhaps worthwhile. The final chapter provides an effective wide-ranging discussion of groundwater resource and environmental management issues culminating with the looming threat of climate change. Not to be overlooked, the reference listing and appendices are a valuable resource. I am sure to be directing my own students

towards Appendix 10 containing very useful review questions and exercises.

Weaknesses? Although I found immense value in the many text boxes, they could be up to four pages long and at times were perhaps too disruptive of the main text flow. Some text boxes also contained specialist topic areas that perhaps could have been in the main text. Strengths? Largely indicated above, but in summary – an accessible textbook that provides a comprehensive and balanced introduction to the theoretical principles of hydrogeology and excellent illustration of its practical outworking in the real world.

Michael O. Rivett

BROWN, M. & RUSHMER, T. (eds) 2006. *Evolution and Differentiation of the Continental Crust*. vii + 553 pp. Cambridge, New York, Melbourne: Cambridge University Press. Price £80.00, US \$140.00 (hard covers). ISBN 0 521 78237 6.

doi:10.1017/S0016756806273059

This is a substantial book of 553 pages, divided into 14 chapters that are a mixture of overviews and more detailed studies of particular areas and/or geological processes. In their introduction (Chapter 1), the editors stress secular evolution and pose three fundamental questions: (i) how was crust extracted from the mantle, has it changed over time and was it continuous or episodic?; (ii) how much crust went back into the mantle, by what mechanism, and what is the resultant net rate of growth through time?; and (iii) stable continental crust consists of upper, middle and lower crust and lithospheric mantle: how has the crust differentiated, has the mechanism changed over time, and what are the consequences for the Moho? The reader is asked to keep in mind whilst reading the book (a) are arcs and/or ocean plateaux the seeds of the continents and how have they changed over time (plumes versus subduction) and, (b) what is the response of the crust to melting in orogens, how is melt extracted and transported and how is asthenospheric heat transferred to the crust to make all this happen?

I must say that I found the book a little unbalanced. Whilst there are excellent review chapters – that by Hugh Rollinson (Chapter 6) on ‘Crustal Generation in the Archean’ clearly taking the ‘gong’ for its thoroughness and readability (though it could have appeared earlier in the book) – several of the ‘detailed’ chapters fall short of the mark and a number would have been better placed in a volume focused entirely on granitoid generation and emplacement. I also enjoyed the McLennan, Taylor and Hemming ‘update’ in Chapter 4, with a revised table showing elemental abundances in the continental crust. Surprisingly though, there is no comment on the significant amount of juvenile continental growth in the Phanerozoic, recently recognized by Bor-ming Jahn and co-investigators in the Central Asian Orogenic Belt. The review of melting of continental crust by John Clemens (Chapter 9) is also an excellent summary of current knowledge. Given the comments by the editors in their introduction, I would have expected to see a chapter specifically devoted to the Proterozoic, since this represents almost two billion years of Earth history, and has some globally-recognizable characteristics. The questions posed in Chapter 1 are extremely pertinent and, although partly addressed in the overviews, were not always picked up in subsequent chapters.

Mistakes in spelling, grammar and presentation are few in number, though present in all chapters, and especially so