

problems. Some of the ideas presented in it will undoubtedly wither and pass from sight in future years but the volume will remain an historical record of the state of our knowledge on matters granitic. As such it has a place in any good geological library.

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Cawthorn, R.G. (ed.) *Layered Intrusions*. Amsterdam (Elsevier Science BV). 1996, x + 531 pp + 1 map. Price \$93.75 (softback), \$200.00 (hardback). ISBN 0-444-81768-9 (hardback) 0-444-82518-5.

Layered plutonic igneous rocks remain one of the most contentious and fascinating aspects of igneous geology. Layering phenomena are an important clue to processes occurring during the crystallization of igneous bodies. This book represents a valuable attempt to bring together a variety of experts on different layered igneous intrusions into a single monograph, and will undoubtedly be embraced as an important reference for studies on layered rocks. It is now ten years since the publication of *Origins of Igneous Layering*, edited by I. Parsons, which many will consider an important contribution to research into layered igneous rocks. *Layered Intrusions* updates much of that work, but the style is more of a review, and will appeal to a wider audience.

The format of the book is as a series of 14 chapters, each tackling a different aspect, with a foreword by G.M. Brown. The first four chapters consider the origins and development of layered igneous rocks, whilst the remaining seven are descriptive reviews of some key intrusions or provinces (including Skaergaard) which have provided some of the most important clues to our understanding of layered processes. A colour pull-out map is provided with the Skaergaard review. The chapters' titles and authors are: 1. H.R. Naslund and A.R. McBirney, Mechanisms of Formation of Igneous Layering; 2. I.H. Campbell, Fluid Dynamic Processes in Basaltic Magma Chambers; 3. R.H. Hunter, Texture Development in Cumulate Rocks; 4. C.A. Lee, A Review of Mineralization in the Bushveld Complex and some other Layered Mafic Intrusions; 5. A.R. McBirney, The Skaergaard Intrusion; 6. H.V. Eales and R.G. Cawthorn, The Bushveld Complex; 7. J.R. Wilson, B. Robins, F.M. Nielsen, J.C. Duchesne and J. van der Auwera, The Bjerkreim-Sokndal Layered Intrusion, SW Norway; 8. J.D. Miller Jr and E.M. Ripley, Layered Intrusions of the Duluth Complex, Minnesota, USA; 9. J.R. Wilson and H.S. Sørensen, The Fongen-Hyllingen Layered Intrusive Complex, Norway; 10. B.G.J. Upton, I. Parson, C.H. Emeleus and M.E. Hodson, Layered Alkaline Igneous Rocks of the Gardar Province, South Greenland; 11. A.H. Wilson, The

Great Dyke of Zimbabwe; 12. C.H. Emeleus, M.J. Cheadle, R.H. Hunter, B.G.J. Upton and W.J. Wadsworth, The Rum Layered Suite; 13. I.S. McCallum, The Stillwater Complex; 14. C.I. Mathison and A.L. Ahmat, The Windimurra Complex, Western Australia.

The foreword stresses the importance of the book to researchers, but the book will have another role as a one-stop reference for final-year undergraduate students of igneous petrology. Naslund and McBirney's condensed but readable review of magma chamber processes and the reviews of key intrusions such as Skaergaard, will be an invaluable teaching aid. My only criticism of the book lies not with the content but with the cost. With a price tag of US\$200 for a hardback, there are few individuals who will be able to purchase this book. In times of increasing financial restraint in higher education, it will also be outside the price range of many institutions and university libraries. It is a pity that such an important contribution will not reach a wider audience.

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Hoefs, J. *Stable Isotope Geochemistry: (fourth completely revised, updated and enlarged edition)*, 4th Edition, Berlin, Heidelberg and New York (Springer-Verlag), 1996, xi + 201 pp. Price DM78.00. ISBN 3-540-61126-6.

This book of 168 pages provides a synopsis of some stable isotopic concepts and data relevant to the Earth Sciences. The book comprises three main parts *viz.* Chapter 1: Theoretical and Experimental Principles (26 pages); Chapter 2: Isotope Fractionation Mechanisms of Selected Elements (34 pages); Chapter 3: Variations of Stable Isotope Ratios in Nature (103 pages), with this last chapter being divided into 12 sections, each dealing with isotopic variations in particular geospheres. Chapter 3 devotes 51 pages to stable isotopes in low-temperature systems (e.g. 15 on Section 3.11: Sedimentary Rocks) and 38 pages to stable isotopes in high-temperature systems (e.g. 5 pages to Section 3.3: Magmatic Rocks).

The book is useful as a source of information, but it is not for the non-specialist, despite the claim made in the preface that "The book is written.....more for the non-specialist and graduate student, who needs practical knowledge of how to interpret stable isotope ratios." This is a book for reference into which those with some acquaintance with isotopic techniques can delve to widen their understanding of isotope systematics and pick up hints and information that might be useful or lead them down new paths. There are several books (e.g. E. Mazor, *Applied Chemical and Isotopic Groundwater Hydrology* and G. Faure,