Acknowledgments

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Reference cited

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BOOK REVIEW

CHEMICAL TRANSPORT IN METASOMATIC PROCESSES (NATO ASI Series C: Mathematical and Physical Sciences, vol. 218). Edited by Harold C. Helgeson. D. Reidel, Dordrecht, Holland, 1987, 782 pages, $149.00.

This book is an outgrowth of a NATO Advanced Studies Institute in Corinthia and the Cycladic Islands, Greece. It contains 28 papers, 6 abstracts, and a Seriphos, Syros, and Naxos excursion guide. Although the book does not cover metasomatism at earth surface conditions, there is an incredible array of contributions by both established leaders and younger scientists in metasomatic processes. No Greek gods made contributions perhaps because Mount Olympus was not visited. However, as did the conference, the 50-page excursion guide will undoubtedly increase the geological interest in the Greek islands.

The book is not a textbook in format, but rather is a collection of provocative research contributions of particular interest to those who are interested in chemical changes in crustal and mantle rocks. For a large conference volume, the overall quality of the contributions is particularly high. I detected only one production error, a poorly printed page 351. The book contains a nice blend of theoretical, field, and experimental work. Even a casual perusal of the book demonstrates the importance of fluid during metasomatism. Fluid-rock interactions are clearly basic to our understanding of metamorphism, ore deposition, and weathering.

Although the price is high, particularly for camera-ready copy, I am considering using the book for a graduate seminar class in geochemistry. This would be after a good foundation in thermodynamics and introductory geochemistry. The contributions clearly show how research at the forefront is handled. It is instructive to the student to determine or read about what is correct, what is wrong, and what is a matter of personal conjecture.

Rather than an extensive list of titles of the articles, perhaps it is more appropriate to list first authors and thereby to give an idea of the international character and the scope of the book. These are G. M. Anderson, D. K. Bailey, T. Bowers, D. M. Carmichael, H. J. Greenwood, H. C. Helgeson, D. R. Janecky, P. Lichtner, G. van Marcke de Lummen, G. Michard, A.M.R. Neiva, D. L. Norton, D. Papanikolaou, Tj. Peters, H. R. Pfeiffer, R. Sack. J. Salemink, M. Schliestedt, J. Schott, W. Schreyer, R. Schuiling, S. Steinthórsson, H. P. Taylor, Jr., J. B. Thompson, Jr., J. Touret, V. Trommsdorff, and R. Vollmer.

Included in the book are contributions concerned with controls on the composition of metamorphic, geothermal, and mantle fluids, alteration of oceanic crust, metamorphism of peraluminous and ultramafic rocks, skarn deposits, hydrothermal alteration, isotopic behavior, fluid inclusions, rocks buffering fluid composition, CO_2–H_2O-NaCl fluids, fluid advection and reaction, constant volume, equilibrium and disequilibrium mineral textures, tennahedrite, moderation theorems, and four articles on metamorphism in the Greek islands.

This NATO volume clearly shows that the conference was a worthy successor to the last A. S. I. on a similar subject, Volatiles in Metamorphism, held in 1974. As a thought-provoking book, it should stimulate exciting future research. The book ought to take its place on one's bookshelf next to *Researches in Geochemistry,* volume 2, 1967, edited by P. H. Abelson. In many ways it is an expanded and updated version of this book.

May Zeus and Pallas be with us.

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