

## Book Reviews

***Glossary of Mineral Synonyms* by Jeffrey de Fourestier. Canadian Mineralogist Special Publication 2. Mineralogical Association of Canada, Ottawa, Ontario, 1999. 445 pp. ISBN 0921294441. US\$50 (US\$40 to MAC members)**

Back in 1997, *The Canadian Mineralogist* came out with its first Special Publication, *Encyclopedia of Mineral Names* by Blackburn & Dennen, ed. R. Martin (US\$40 or US\$32 to MAC members), which contained a comprehensive listing of 3800 mineral species, each given their chemical formula, first discovery, and a summary of various points of interest to the reader. However, as Jeffrey de Fourestier so aptly says in his introduction to the second Special Publication, *Glossary of Mineral Synonyms*: ‘Over many years of collecting, one is bound to accumulate a number of specimens associated with old, discarded, discredited or uncommonly used names (not to mention names created for purposes of trade or simply to befuddle the collector).’ How true. And it is with these befuddlements in mind that de Fourestier has carefully put together 432 pages of mineral synonyms, in alphabetical order, each entry accompanied by its IMA-approved terminology in bold type, along with reference to any other synonym that may provide further enlightenment to the reader. Many vagaries are accounted for, including misspellings (does mellilite = mellite or melilite?), odiferous terminology (stinkfluss = fluorite), and unnamed or poorly defined minerals, which are listed at the back of the book. The volume is tastefully illustrated, at the start of each section, with a black-and-white drawing by Gregory Ivanyuk, and the overall typesetting is clear, if a little unimaginative. The lack of mineral formulae and other details means that, as its name would suggest, this volume cannot easily stand alone as a comprehensive mineral reference text, but should be used in conjunction with Special Publication 1 for many applications. The price for Volume 2 (US\$50/40) is extremely reasonable, given the quality and quantity of material contained therein, and the book should be considered an essential text for libraries, mineralogical museums, and all serious mineral collectors.

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***Atlas of Micromorphology of Mineral Alteration and Weathering* by Jean E. Delvigne. Canadian Mineralogist Special Publication 3. Mineralogical Association of Canada (in collaboration with ORSTOM, Paris), Ottawa, Ontario, 1999. 509 pp. ISBN 0921294433 (MAC), 2709914204 (ORSTOM). US\$125 (US\$100 to MAC members)**

Those of us who do the sort of work with igneous rocks that demands we actively seek samples that are as close to the ‘when-it-came-out-of-the-volcano’ state as possible (except, perhaps, in the thermodynamic sense), need to be reminded, on occasion, that our work represents merely an end-member in the great spectrum of petrological and geochemical research into igneous rocks. For example, an igneous petrologist or geochemist might consider research into the weathering and alteration of igneous rocks as a kind of ‘posthumous’ study, whereas a soil scientist might describe the eruption and crystallization of magma as the birth of his or her starting material. The work of Jean Delvigne on the topic of mineral alteration and weathering forms a strong and essential bridge between the research of the petrologist and that of the soil scientist. He describes it simply as ‘the point at which rocks meet the environment’.

Delvigne’s lifetime of dedicated and meticulous work has been brilliantly encapsulated in this 494-page book, meticulously edited by Robert Martin. The overall typesetting and layout is colourful, imaginative and neat, and includes 600 colour photomicrographs, carefully selected from Delvigne’s collection of more than 10 000, which are clearly labelled and fully described. Like any good cook, Delvigne starts with the ‘ingredients’, in this case, virtually unaltered (mostly igneous) rocks, and methodically leads the reader through the various stages and degrees of alteration of their principal rock-forming minerals, using photographs, as well as colour and black-and-white illustrations combined with descriptive and explanatory text, until one arrives at the principal constituents of soil, no longer recognizable as ‘rock’. This is an easy (and colourful) transition for a petrologist to follow and understand, although necessarily backwards for a soil scientist. The rock-types (and hence rock-forming minerals) covered are extensive and diverse, including picrite, komatiite, basalt, gabbro, pyroxenite,

amphibolite, granite, syenite, phonolite, charnockite and carbonatite, as well as additional minerals such as garnet, staurolite, titanite and perovskite. The most common rock types (basalt, pyroxenite, gabbro, granite) appear repeatedly throughout the book in progressively altered guises.

The book is divided into four main sections. The first, an introductory section, begins by outlining the general concepts involved in weathering processes, including a number of basic definitions, and the influence of kinetics, porosity and chemical dissolution on both petrography and geochemistry, as well as providing detailed instructions on how to sample a weathered profile (i.e. pristine bed-rock through to the resultant soil). The second section deals with the 'patterns of weathering',

including clear descriptions of the degrees and patterns of weathering, as well as primary residues and secondary products. The third section covers 'alteromorphs' and includes a classification scheme that is summarized in colourful, diagrammatic form on the inside book covers for easy reference. The final section, where petrology turns into soil science, covers lithorelics, alterelics, nodules and pisoliths.

I would highly recommend this book to all libraries, to field geologists, environmental geologists, petrologists and soil scientists alike, and the quantity and quality of the book's content make it excellent value for money.

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