Nanogeochemistry is discussed by Wang, Gao, and Xu who describe the range of possible and current technical applications (e.g., for osmosis). They show that stability is size dependent and emphasize the importance of colloids. Thus, synthetic materials can be designed to effect the removal of toxins, like Hg and Pb, from H₂O and to undertake nuclear waste management.

Jartun and Ottesen outline the geochemical aspects of urban geochemistry concentrating on the poorly monitored way in which landfill moves environmental hazards (e.g., Pb) around our cities. Interestingly, soil pollution in city centers can be largely independent of industrial history. This chapter is a little overly emotive but provides an example of geochemical application that, while in its infancy, may become increasingly focused in the public eye.

The book ends with a chapter by Schwarcz on archaeological and anthropological applications. Although commonly concerned with age dating, this chapter also highlights the application of trace elements and hand-held spectrometers to the determination of the provenance of artifacts and the dietary niche of animals and humans. There is a pleasingly thorough coverage of available analytical techniques, and the use of C and N isotopes to constrain palaeoclimate is also briefly discussed.

Overall this book is an interesting, if somewhat eclectic, collection of chapters that will be of interest to anyone wanting to broaden their knowledge of the field of geochemistry. The book is nicely put together, although the order of chapters and their inter-linkage could have benefited from more consideration, and there is really no need for the color plates. Some chapters do not always make clear what we have learned and what we still need to be solved, and the depth and coverage is quite variable. Nevertheless, overall the book is very readable, and the reference list and the nice addition of “additional reading” lists at the end of the chapters will be very welcome to those that buy it.

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ERRATUM


The authors provide corrected formulas for tobelite:

\[ [K_{6.13}Na_{0.07}(NH_4)_{0.62}]_{3.01} (Al_{1.96}Fe^{3+}_{0.02})_{2.00} (Si_{3.14}Al_{0.86})_{2.00} O_{10.00} (OH)_{2.00} \]

and for NH₄⁺-rich muscovite:

\[ [K_{5.44}Na_{0.40}Ba_{0.01}(NH_4)_{0.17}]_{3.00} (Al_{1.00}Mg_{0.01}Fe^{2+}_{0.00}V^{3+}_{0.01})_{2.00} (Si_{3.13}Al_{0.87})_{2.00} O_{9.90} F_{0.08} (OH)_{2.00} \]