

recorded, of which 36 were first described from Cornwall and 136 whose first British recorded occurrence was in Cornwall.

The earliest described localities are listed for each species, but many of the present-day exposures get scant treatment; thus scapolite-wernerite is listed as occurring with axinite and zoisite in Tater Du greenstones, but there is no mention of this locality under either axinite or zoisite. Old and discredited names are listed, yet there is no entry for gilbertite. The touchstone for credibility is rightly the third edition of *Hey's Mineral Index*, but one is perplexed to find potassium magnesio-arfvedsonite [*Mineral. Mag.*, 1982, 257–66] as 'no record found of acceptance as a species, no reference in Hey 3'. Have the authors not heard of the I.M.A. nomenclature of the amphiboles [*Mineral. Mag.*, 1978, 533–63], where magnesio-artvedsonite is defined and the prefix potassium is specified for an amphibole with $K \geq 0.50$ in the standard formula? Potassium magnesio-arfvedsonite is certainly not a new species, but a new variety, as the author claimed.

The typography and layout are generally clear, but in some instances entries run into one another, e.g. chloropal onto chlorargyrite, diallogite onto diadochite, titanomagnetite onto titanite. Despite all these points, which could be easily remedied in a future edition, this book will be very useful as a quick reference to give known Cornish occurrences and formulae.

R. A. HOWIE

Hawthorne, F. C. and Martin, R. F., Eds. *Microbeam Techniques in the Earth Sciences*. Thematic Issue of the *Canadian Mineralogist*, Volume 33, 1995, 201–508. Price \$50 CND (for purchasers outside Canada).

This thematic issue of the *Canadian Mineralogist* mainly contains papers presented at a Special Session of a GAC-MAC Annual Meeting in Waterloo, Ontario, Canada, and includes a total of 23 papers designed to familiarize the Earth Science community with the range of microbeam techniques currently available and the kind of work that can be done with them. Roughly half the special issue comprises papers that review the technical, analytical and general applications of selected microbeam techniques, covering electron-probe microanalysis of minerals for the light elements (Raudsepp, British

Columbia), SIMS (MacRae, Western Ontario), accelerator mass spectrometry (Wilson, Rucklidge and Kilius, Toronto), Auger-electron spectroscopy (Nesbitt and Pratt, Western Ontario), micro-analytical techniques in stable isotope geochemistry (Kyser, Saskatoon), two papers on micro-PIXE / mineralogy and geochemistry (Campbell, Teesdale and Halden, Guelph/Manitoba), laser ablation ICP-MS (Fryer, Jackson and Longerich, Memorial), and microbeam X-ray diffraction (Wicks *et al.*, Royal Ontario Museum, Toronto). The second half of the volume covers more specific applications of microbeam techniques including EPMA of alkaline silicate glasses, SEM electron channelling, SIMS (three papers), comparison of methods for boron, micro-Raman spectroscopy (two papers), laser ablation ICP-MS (four papers), synchrotron XRF/LA-ICP-MS and finally, micro-XAFS.

The majority of the contributors are Canadians working in Canadian Universities, so in a sense this collection of papers represents the state of health of microbeam work in Canada today (it is alive, kicking and in pretty good shape!). In terms of microbeam techniques, it's difficult to think what has been left out. Certainly all the main stream microbeam techniques are more than adequately covered. Furthermore, probably because of clear editorial direction, care has been taken by contributors to explain the fundamentals of the respective techniques and papers are, in general, very well illustrated using line diagrams, spectral output and half-tone photographs (where appropriate).

And finally, having just been involved in editing a book of similar coverage, I can't help but remark on how near the coincidence between title, publication date and scope of the present volume, with the Mineralogical Society's just published 'Microprobe techniques in the Earth Sciences'. To distinguish them, the *microbeam* book has more of a research flavour to it, as might be expected of papers submitted to a primary journal and furthermore includes techniques such as accelerator mass spectrometry that do not normally offer direct spatially resolved data. The *microprobe* book, comprising invited contributions, has a more unified approach that should attract the novice as well as the more experienced reader. And although this view is not entirely unbiased, both books well deserve to lie side by side in the laboratories of all users of microprobe instrumentation.

P. J. POTTS