

volume which would have been well beyond the patience (and pocket) of the majority of potential readers. Instead he has compiled a relatively slim publication and in it attempted to pack as much information as he and his co-authors can, at a level which should be comprehensible to advanced undergraduates, post-graduates and industrial chemists alike.

In doing so, however, he must have been prepared to accept the inevitable result, namely that some topics simply cannot be described adequately in one or two pages, and that a reader may be left frustrated and annoyed by the lack of information. Fortunately chapters of this type are in the minority and Sibilia's gamble has paid off. The majority of chapters are well written, containing crisp line diagrams and photographs (non-glossy) of reasonable quality.

The highlight of the introductory chapter is the section on problem solving or 'trouble-shooting'. Examples are drawn from the polymer industry (delamination in food packaging film) and the semiconductor industry (failure of a thick resistor in a sensor circuit). The way in which these problems were tackled, the variety of analytical techniques which were used, and the conclusions reached make excellent reading and whet the appetite for the rest of the book.

Of the 12 chapters, chapter 5 (*Chemical analysis, electrochemistry and atomic spectroscopy*) is the one for which most criticism is reserved. It is 27 pages long but it covers no fewer than 12 different topics. Not only are there 12 topics but the range of topics is far too great for one chapter and this is its downfall. Contrast this with chapters 2 (*Molecular spectroscopy*), 7 (*Microscopy*) and 8 (*Surface analysis*) whose respective lengths are 27, 26 and 33 pages but which contain sections that are closely related and follow on naturally from one to the next. They are well written, whereas the feeling one gets after reading chapter 5 is that a number of analytical techniques were left over and could not be fitted into any other chapter so they were combined. This is a pity because the sections on AAS, ES, flame emission, and ICP-AES could have been usefully expanded and used to form a chapter on their own. The same could be said for ion-selective electrode analysis, radioactive tracer

analysis, polarography and voltammetry, and isotachopheresis. Classical chemical analysis, functional group analysis and combustion analysis could have been relegated to an appendix, and neutron activation analysis (NAA) could have been incorporated in the X-ray analysis chapter.

The layout of chapter 5 is the one failing in this book. All other criticisms are minor. In chapter 6 (*X-ray analysis*) no mention whatever is made of X-ray powder photography which still has an important role to play in the analysis of microgram-sized samples – in particular metallic specimens which diffract strongly in the back-reflexion region. The section on synchrotron X-ray sources is too short for such an important topic.

There are a small number of typographical errors and other more irritating grammatical errors e.g. 'comprised of' and 'it's' instead of 'its'. On p.282 in the text Figure 2 is incorrectly referred to as Fig. 1, and on p.173 the In/Pb ratios from XPS spectra on fresh and aged metal foils have been transposed.

In summary this book is attractive and well produced, it is pitched at the correct level for its intended readership and, with the exception of chapter 5, a pleasure to read. It also represents good value for money.

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Monteregian treasures. By *J. A. Mandarino* and *V. Anderson*. Pp. xiii + 281. Cambridge University Press, 1989. Price £60.00, US\$ 85.00. ISBN 052132632X.

The title *Monteregian treasures* and the appearance suggest a 'coffee-table' book, and indeed it contains the wealth of beautiful colour photographs one might expect in such a book. But there is much more besides. The book is a classic of topographical descriptive mineralogy, reviewing their available information on the minerals of a par-

ticular area, a type of book which seems to be enjoying a welcome revival after a long lapse from popularity.

Mont Saint-Hilaire, one of the Monteregian Hills about 40 km east of Montreal, is one of the mineralogical treasure troves of the world. It has yielded some of the most remarkable and beautiful mineral specimens and many examples of rare species. The book brings together for the first time the known data on the 221 mineral species found at Mont Saint-Hilaire which include examples of many rare carbonates and silicates.

The book begins with an introduction to the geology, petrology and geochemistry of the area; the minerals which occur there, their chemical classes and the different types of geological environment in which they occur. The main part of the book is devoted to the description of each of the minerals found at Mont Saint-Hilaire and covers *Form and habit, Physical properties, Occurrence and associated minerals, Optical properties, Chemical data, Crystallographic data* and *Distinguishing features*. There are coloured or black-and-white photomicrographs to illustrate the habit of many of the minerals described. Appendices contain (A) single-crystal data arranged in alphabetical order of mineral species and in 'Crystal Data' order by crystal system and axial ratios; (B) powder diffraction data (six strongest lines) in order of mineral species and in Hanawalt order; (C) mineral occurrences in the different types of geological environment; (D) mineral species by chemical classification; (E) chemical analyses of the minerals.

The book is a most comprehensive reference work: the mineral collectors and museum workers for whom it must be mainly intended will find it invaluable as an aid to mineral identification and as a source of data on the rarer minerals generally. Mineralogists are fortunate that their subject allows them a reference book like this, whose clarity of layout and colour photographs will make it a delight to use or just look through.

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