

Prichard, H. M., Potts, P. J., Bowles, J. F. W. and Cribbs, S. J. *Geo-Platinum 87*. London and New York (Elsevier Science), 1988. xiii + 422 pp. Price £70.00.

This interesting volume contains papers presented at the Geo-Platinum 87 Symposium held at the Open University in April 1987. The editors are to be commended for publishing 19 stand-alone abstracts as well as 25 generally concise papers, thus enabling the flavour of current research in platinum group mineral (PGM) distribution, geochemical behaviour and analysis to be fully appreciated by the reader. Most of the contributions deal with individual occurrences, ranging from the Americas to Europe to Africa (North, South and Equatorial) to the Philippines. Although less numerous, the articles on analytical techniques and the behaviour of PGMs in aqueous fluids reveal important and significant advances in the study of PGMs in the crust.

The setting for the current escalation of interest in platinum exploration is lucidly described in the introductory invited papers by C. J. Morrissey and C. R. N. Clark. The former emphasises the importance of accuracy of geochemical assays for PGMs, whilst S. J. Parry, I. W. Sinclair and M. Asif show in their studies that there is considerable scope for the further development of more reliable analytical methods. Two novel methods are presented by I. Shazali, L. van't Dack and R. Gibels (detailing a technique for PGM preconcentration) and P. J. Potts (beta autoradiography for finding PGM grains in polished thin sections).

Papers representing major advances in our understanding of PGM ore genesis and redistribution are contained within the section 'Theoretical and Experimental Studies'. B. W. Mountain and S. A. Wood provide a well-organised theoretical analysis of the solubility and transport of platinum-group elements in hydrothermal solutions. They systematically consider the likely importance or otherwise of a variety of inorganic PGE-complexing ligands. A flaw is the miscalculated overestimate of the stability of Pt- and Pd-hydroxide species. Nevertheless, this paper, together with that of I. R. Plimer and P. A. Williams, provides valuable guidelines for theoreticians and experimentalists interested in the role of aqueous fluids in concentrating or redistribution PGEs. An explanation for the enrichment of Ni, Cu and PGE in chromitite sulphides is elegantly developed by A. J. Naldrett and J. Lehmann. They invoke the loss of Fe from sulphide, on cooling, to non-stoichiometric Fe-deficient spinels, crystallised from a basaltic melt.

The remaining papers in this volume provide an extensive coverage of PGM deposits of different types in various tectonic environments and locations. Detailed petrographic and structural studies include those of A. J. MacDonald (Lac des Iles), K.-P. Burgath (Kalimantan), B. Orberger, G. Friedrich and E. Woermann (Acoje Ophiolite). Considerable emphasis, however, has been placed on chemical assays for PGMs and establishing (or otherwise) the association of Os-Ru-Ir with chromite and Pt-Pd-Ir with sulphides; for example the papers of D. J. M. Burkhard, N. J. Page and G. C. Amstutz (Serpentinites, Eastern Central Alps), W. Fischer, J. Amosse and M. LeBlanc (Bou-Azzer Ophiolite), and R. F. J. Scoates, O. R. Eckstrand and L. J. Cabri (Bird River Sill). S.-J. Barnes and co-authors assess the use of various chemical analytical discriminators in establishing the relative importance of various processes controlling the distribution of PGEs. This paper is suffixed by a substantial reference list of analytical data on rock PGM contents.

A recurring theme throughout this volume of proceedings is the influence of aqueous fluids in redistributing PGEs. J. Bowles presents evidence for groundwater transport of PGEs in Sierra Leone above the Freetown Layered Complex. Evidence for fluid beneath Merensky Reef pot-holes is provided by R. G. Cawthorn and K. L. Poulton. Direct evidence of hydrothermal transport of PGEs is documented by A. J. MacDonald (Lac des Iles), D. H. Watkinson and R. Dahl (Two Duck Lake Intrusion) and J. H. Crocket and A. Kabir (Hawaiian basalt).

There are many other interesting articles in this volume, which succeeds admirably in its stated task of giving 'the reader a taste of contemporary research activities which are now being pursued ... to further ... understanding of concentration processes ... [potentially leading to ore formation]'

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Hodgson, A. A. *Alternatives to Asbestos and Asbestos*. Crowthorne, Berkshire (Anjalena Publications Ltd.), 1987 (2nd Edition). ix + 284 pp. Price (post-free) UK £54.00, Europe £56.00, others £60.00.

The background against which this book has been written can be gleaned from two passages from its early pages. In his Foreword for the first edition (1985), Sir William Simpson paraphrased from the Report of the Advisory Committee which he Chaired in 1978/9 that it recommended that those