

readable and fairly free of minor errors, and should certainly be available in all industrial and university libraries catering for resource scientists.

R. A. HOWIE

Lynch, A. J., Johnson, N. W., Manlapig, E. V., and Thorne, C. G. *Mineral and Coal Flotation Circuits; their Simulation and Control* (Developments in Mineral Processing, vol. 3). Amsterdam and New York (Elsevier Sci. Publ. Co.), 1980. xiv + 292 pp., 168 figs. Price Dfl. 130.00 (\$63.50).

This is Volume Three in a series called Developments in Mineral Processing. It is written by an Australian team who are well known in the field of mineral flotation.

Any froth flotation process is a complex system: it is a very difficult system to simulate but mathematical models of flotation circuits have slowly been developed in an attempt to achieve better control of industrial flotation plants and of the products that are obtained.

Many mineralogical features, such as grain-size distribution, particle shape, particle composition, particle texture, etc., are very important in the flotation process, but these features are only briefly mentioned in the book. Other physical and chemical variables of flotation circuits, such as flow rate, solids density, reagent concentration, etc., are, however, dealt with in much greater detail. The techniques used for simulating the performance of a flotation circuit are discussed at length: the use of these techniques for designing and for optimizing automatic control systems for flotation processes forms the main theme of the volume.

This is a book for the specialist mineral processing engineer who will find it extremely interesting and useful. It is not a book, however, for the general reader or even for the mineralogist who is interested in mineralogical developments within the mineral industry.

M. P. JONES

Trümpy, R. *Geology of Switzerland: A Guide-Book. Part A: An Outline of the Geology of Switzerland*. Basel and New York (Wepf & Co.), 1980. 104 pp., 46 figs., 1 coloured pl. Price Sfr. 35.00.

*Part B: Geological Excursions*. Ibid., 230 pp., 204 figs. Price Sfr. 73.00. Parts A and B together Sfr. 98.00.

This two-volume work undoubtedly provides the most authoritative, up-to-date, and reasonably concise review of the geology of Switzerland and

how to see it. It is written in English, with English and French or German figure captions. The form of the publication was, in large part, determined by the organizers of the International Geological Congress in Paris, at whose request it was prepared.

The first volume (104 pages) is subtitled 'An outline of the geology of Switzerland'. It forms a general introduction to the Field Trip Guide which makes up the second part of the publication. The first volume is also being published simultaneously by the International Geological Congress as part of *The Geology of Western Europe*.

Although much of this volume is taken up with a discussion of the Alps, there are good sections on both the Molasse and the Jura. It is largely the work of Rudolf Trümpy, who in his introduction emphasizes that he is attempting a review rather than a synthesis. Five other workers have made briefer contributions—Bernoulli on the Southern Alps, Trommsdorf on Alpine metamorphism and intrusions, Grunenfelder and Koppel on geochronology, and Muller on crustal structure. The volume is profusely illustrated with black-and-white maps and sections, invariably clear and well drawn, and with one coloured foldout containing three cross-sections of Switzerland at a scale of 1:500 000. This part concludes with a short list of about twenty references.

The second part contains itineraries and locality descriptions for sixty-one days in the field in Switzerland. These are arranged into seven itineraries which provide an extremely comprehensive coverage of the geology. Thirty-two different authors have contributed sections of the guide book. Necessarily their approach is somewhat variable; some rely on the first volume to give the background and setting for their excursion, others provide substantial introductions; some provide reference lists; some provide detailed locality maps. All, however, provide numerous excellent illustrations; there is scarcely a page without one or more cross-sections, tables, or maps.

Even for those who never take this guide into the field, it must serve as an invaluable source volume for information on the local Swiss geology. For those who intend to use it as a guide it clearly supersedes anything at present available, and is in that sense essential.

There is no question that this pair of volumes should be available in every geological library likely to be used by those with an interest in the Alps, except that those purchasing the *Geology of Western Europe* will already have the material of the first volume and may wish to buy only the second volume containing the itineraries.

E. R. OXBURGH