

Book news

1. Books from Elsevier

The following are available from Elsevier Applied Science, Crown House, Linton Road, Barking, Essex IG11 8JU, UK.

- *Drilling wastes*, edited by F.R. Engelhardt, J.P. Ray, and A.H. Gillam. 1989. 872 pp. £95.

This volume contains the proceedings of the 1988 International Conference on Drilling Wastes, which was held in Calgary (Canada) in April 1988.

The forty-two peer-reviewed papers fall into categories of case histories, treatment and control methods, discharge and effects, monitoring, and testing procedures. Two summary papers are also included, one on land and one on marine issues. For ease of use, each paper includes an abstract, and a subject index closes the volume. Some of the papers address issues of controversy such as the question of tainting of fish from the discharge of oily drilling wastes, or the effectiveness of treatment of salt-water mud discharges, and it is important to bring such issues into the open forum.

- *Geothermal resources*, by R. Bowen. 2nd ed. 1989. 468 pp. £60.

Since the Arab oil embargo of 1974, it has been clear that limitless quantities of low-cost energy are no longer available. Coupled with this is the increasing concern over the problems of pollution and warming of the earth's atmosphere, arising from the consumption of fossil fuel. The current trend on both economic and environmental grounds is towards a reduction in the burning of fossil fuels, and one of the most attractive alternatives is geothermal resources. It is estimated that by 1990, 0.5 per cent of the total electrical installed power in the world will be produced geothermally, a significant proportion of this being contributed by the third world.

- *The fate and effects of oil in freshwater*, edited by J. Green and M.W. Trett. 1989. 340 pp. £42.

Over the past two decades, most of the work related to the fate and effects of oil entering the aquatic environment has centred on petroleum pollution in the sea. A parallel concern for the freshwater environment has lagged behind, and little information has been published on the potential problems of pollution by oil. Incidents involving spills of petroleum during inland exploration and production, transport, refining, or storage often do occur, polluting rivers, and terrestrial run-off from municipal, urban, and industrial sources. This book fills the gap in the research of this important area of pollution, and provides a synthesis of the current understanding of the fate and effects of oil in freshwater.

- *Mining and the freshwater environment*, by Martyn Kelly (with contributions by W.J. Allison, A.R. Garman, and C.J. Symon). 1988. 228 pp. £32.

In the past two decades there has been an increasing public awareness of the potential hazards that exist from the contamination of the freshwater environment by toxic substances associated with the mining industry. With the increasing world demand for minerals, the exploitation

of natural resources is intensifying and, as a result, concern for environmental protection with regard to mining will undoubtedly continue. This volume assesses the present knowledge of the effects of heavy metals and acidic discharges likely to contaminate the freshwater environment as a direct result of mining activities, and also highlights areas where further research is required.

2. Books produced by Metal Bulletin

The following are available from Metal Bulletin PLC, Park House, Park Terrace, Worcester Park, Surrey KT4 7HY, England.

- *Prices and data 1990*. £41 (airmail).

This 5th edition is a useful reference source for any decision-maker working in, or associated with, the metals industry worldwide. The information is set out in an easy-to-use and time-saving format under the headings Prices, Statistics, Memoranda.

- *Foundry directory and register of forges 1989-1990*. £52 (airmail).

This directory offers an up-to-date, speedy, efficient, and cost-effective way of keeping in touch with the largest source of potential new customers. Its coverage includes a directory of Western European iron, steel, and non-ferrous foundries and forges; a buyers guide to aid swift cross-referencing; a directory of UK suppliers of plant and equipment; and a cross-reference section.

2. Canadian Publications

The following two publications are available from the Canadian Government Publishing Centre, Supply and Services Canada, Ottawa, Canada K1A 0S9.

- *Mining and mineral processing operations in Canada. Mineral Bulletin MR 224*. \$23.70.

This report is a compilation of information relating to mines and processing facilities in Canada at 1st January, 1989. Its two major sections, 'Metal and Industrial Mineral Mines and Processing Plants in Canada' and 'Metallurgical Works in Canada, Nonferrous and Precious Metals', provide such data as the name of the operators, the location of the mine or plant, its capacity, processes, products, and other details of special interest.

- *Canadian minerals yearbook 1989. Review and outlook. Mineral Report 38*. \$47.95.

This edition reports on the activity of the mineral industry over the past year, identifies the principal economic events of 1989, and indicates the major trends in the Canadian economy. The 36 commodity chapters feature economic and policy developments, markets, prices, trade, and production and consumption data specific to each commodity. They also provide a forecast of the industry's future position.

Technology developments

The Mintek Pyrosim Simulator

Pyrosim is a computer program for the steady-state simulation of pyrometallurgical processes. It has been developed by Mintek to simulate processes such as the production of steel and stainless steel, ferro-alloys, metal carbides, and base metals, and the treatment of refractory ores. In addition, the program can be used for the study of various pyrometallurgical pretreatment options such as preheating and prereduction, and also unit operations involving combustion.

One of the primary strengths of the program is its built-in capability to calculate multicomponent multiphase equilibria, along with the automatic performance of energy-balance calculations. This predictive capability allows the program to simulate novel processes accurately.

The general version of the program provides four process models, namely those describing equilibrium, energy-controlled equilibrium, simple heating, and energy-controlled heating. A utility program is supplied with Pyrosim to allow the user to construct particular sets of data files containing only relevant thermodynamic data. For the simulation of processes for the production of crude stainless steel, models have been developed for a number of unit operations.

Pyrosim runs on personal computers using MS-DOS. No special hardware is needed to run the program, although 640K of memory and a math coprocessor are recommended.

Enquiries: Rodney Jones, Mintek. Tel: (011) 793-3511; Fax: (011) 793-2413.

The Wits MicroSim Simulator

MicroSim, which was developed at the University of the Witwatersrand, is a powerful, interactive program capable of simulating both ore-dressing and hydrometallurgical unit processes, and is extremely easy to use. Modern techniques, including a graphics interface, allow the simulator to be used by people with little or no experience of simulation or computing. Standard layouts are used for data input and editing, and default values are provided for all data-input elements.

MicroSim incorporates a routine that allows estimates of the parameters for any of the models in MicroSim to be made from operating data. This routine can also be used to solve design and optimization problems.

An extensive library of models for ore-dressing and coal-washing unit processes is supplied. Models for two hydrometallurgical unit processes are available, namely the CIP or CIL process, and the continuous leaching process. A detailed technical reference manual is supplied, facilitating the addition of new unit models and new icons to the flowsheet editor.

A comprehensive user manual, which includes a number of tutorial problems and an introduction to simulation and modelling technology, is supplied.

MicroSim runs on personal computers using MS-DOS. The system is written in Pascal.

Enquiries: Wayne Stange, University of the Witwatersrand. Tel: (011) 716-2580; Fax: (011) 403-1926

SAIMM BRANCH ACTIVITIES

16 January, 1991 — Orange Free State Branch
Mini-visit
Mr R.L.C. Maggs (0171) 901-2200

19 February, 1991 — Johannesburg Branch
Evening General Meeting — Presentation:
"The Management of Change in a Rapidly Changing Environment at Secunda Collieries",
by C.J. Cloete, General Manager Mining at Secunda Collieries
Venue: Johannesburg Country Club
Time: 17:00, followed by a cocktail party
Peter Smith (011) 638-2284

13 March, 1991 — Orange Free State Branch
General Meeting. Harmony/President Brand & President Steyn
Mr R.L.C. Maggs (0171) 901-2200

13 April, 1991 — Vaal Triangle Branch
Scholars evening in conjunction with the Careers 2000 Exhibition
Professor M.D. Brayshaw (016) 31-1480

May, 1991 — Johannesburg Branch
South Deep Project — Johannesburg Consolidated Investment Company Limited
Details to be announced
Peter Smith (011) 638-2284