

Book reviews

● *The wage structure of graduate White men in 1979*, by Adri Kruger, Pretoria, Human Sciences Research Council, 1979. 76 pp. R5,00.

(Reviewer: D. G. Malan)

The wage structure of highly qualified manpower changes very rapidly, and the Human Sciences Research Council therefore undertakes surveys of this structure every two years.

It is estimated that there are 123 500 White male graduates in the Republic of South Africa and South West Africa. As the names and addresses of all the graduates were not available, questionnaires were sent to 79 541 graduates, and of these 40 280 (or 50 per cent) were completed and returned. This is considered to be a representative example of the National Register group. The age distribution, highest qualification obtained, and language distribution of the two groups (79 541 and 40 280) agree closely. The language distribution is 48,5 per cent Afrikaans and 51,5 per cent English.

Employees

The employees are divided into two sectors:

Public Sector — employees of government, provincial, and local authorities, and semi-government institutions such as the CSIR, SAR&H, Post Office, and S.A.B.S.

Private sector — this includes employees of public corporations (e.g. ISCOR, SASOL, ESCOM) and employees of private firms, organizations, and undertakings.

Self-employed persons include partners of professional undertakings, and managing directors who own more than 50 per cent of a company's shares.

There are 12 categories of employees (or self-employed persons), which range from forestry, mining, electricity, gas and water supply, building construction and construction etc., to protection services (police, defence force, prisons, etc.).

Arrangement of Tables

The wage structure is analysed according to occupation and employee age, economic sector, geographical distribution, highest qualification, MBA/MBL graduates, and additional earnings.

Findings

The median wage of self-employed persons (R20 980 per year) is considerably higher than the median wage of employees in the public sector (R11 890) or of employees in the private sector (R14 110 per year). (The income of an employee is his annual gross salary before deductions and fringe benefits are excluded.)

The annual growth rate in the income of self-employed persons in the professions was generally lower than in the previous survey. Advocates and medical practitioners are the exception.

Employees in the private sector increased by 10 per cent, as compared with approximately 7 per cent for employees in the public sector.

It is of interest to note that the median earnings of patent agents are the highest (R50 000 per year) with

radiologists and pathologists next at R36 500, followed by actuaries at R35 000 and medical specialists at R31 000. The median earnings of personnel consultants, at R24 500 per year, reveal the highest percentage increase (25 per cent).

The survey is well documented and should prove useful to all employers. Copies are obtainable from the Institute for Manpower Research, Private Bag X41, Pretoria 0001.

● *Financial Times mining international yearbook*, edited by William G. Nightingale. London, Longman, 1980. 750 pp. £24 by surface, £34 by air.

(Reviewer: J. D. Austin)

The layout that was introduced last year has been retained. The main section contains reports on companies throughout the world, giving information on personnel, addresses, operating results, ore reserves, financial information, and stock-exchange quotations.

Supplementary sections give a geographical index of companies by country, production statistics by countries for four metals, an index of companies by their production of metals or minerals, and a cross-referencing index of all the companies listed.

Also, there are sections containing advertisements for professional services and equipment.

As before, this book is a useful reference volume for people needing information on mining companies anywhere in the world.

● *Techniques in mineral exploration*, by J. H. Reedman. Barking (U.K.), Applied Science Publishers, 1979. 533 pp. \$90.

(Reviewer: D. L. Kyle)

This book provides excellent and thorough coverage of exploration methods, both historic and contemporary.

However, the coverage, although complete and thorough, is basic to the methods applied and is of little use to the experienced and qualified explorationist. The book is an excellent textbook for university students and a good reference book for exploration geologists in their first few years of exploration. The basic methodology is soundly described, and the account of mineral resources, metal sales and prices, and the philosophies of exploration and mining development forms a good introduction. The sections covering ore-reserve calculation and the evaluation of prospects are simple and basic, providing the student with a good insight into these aspects.

The book has a particular bias towards methodology, and not towards mineral exploration in its overall aspect. The application of the methods is seldom related to different geological environments and metal occurrences, or to the conceptual geological models of metal location. For this reason, it is considered a sound textbook on exploration methods, useful particularly to the inexperienced geologist and the student. It is a good reference book, and should hold a place in any technical earth-science department.

● *Practical geostatistics*, by Isobel Clark. Barking (U.K.), Applied Science Publishers, 1979. 129 pp. £13,75.

(Reviewer: D. G. Krige)

In recent years, the position in regard to available literature on geostatistics has been changing rapidly and drastically. A number of excellent reference works are now available, some with a wide coverage of the subject and others aimed more specifically at specialized models and techniques; some have been designed as advanced textbooks, and others as more elementary introductions to the theory and practice of geostatistics.

Geostatistics as a young, live, and expanding science has a real need for a variety of reference works, and Isobel Clark's book is a welcome addition to the present literature. It is an introduction mainly to variogram and kriging theory and practice. Her expositions are clear and down to earth, and will be most useful to geologists and mine evaluators who know little or nothing about geostatistics, or even statistics, but would like to find out what it is all about and to get to first grips with the subject.

This book covers the three main topics of semi-variogram modelling: the effects of changes in size of ore unit, the volume-variance relationship, and grade estimation (i.e. error definition, and kriging theory and practice). These are dealt with almost exclusively on the basis of the spherical semi-variogram model, although other models are mentioned briefly. Minor criticisms can be raised against the somewhat superficial coverage of, for example, the proportional effect and sampling errors;

in addition, it is not correct to expect the kriging estimator to be equal to the sample value at the location being valued (i.e., for the kriging estimator to be an exact interpolator) except in the unusual case where the nugget effect is zero. However, these criticisms do not detract from the overall value of the work, or from the benefits to be derived in its use as an introduction to a subject that is now practised and taught on a worldwide basis.

● *Uranium: The balance of supply and demand 1978-1990*, by the Uranium Institute. London, Mining Journal Books, 1979. 61 pp. £8,50 by surface, £9,25 by airmail.

(Reviewer: D. J. Crowe)

The report sets out the likely balance of uranium supply and demand to 1990 based, *inter alia*, on factors within the fuel cycle itself that might exercise a significant influence over the balance. The report does not discuss the effects of possible price trends. Demand forecasts are related to reactor-fuel requirements and forecasts of enrichment capacity. Supply estimates are based on realistic forecasts of likely levels of production under expected economic conditions and under the most favourable economic conditions.

The report is intended for all those concerned with the future availability of energy sources, particularly in the nuclear field, where, to date, subjective considerations have tended to hold sway. The report is refreshingly objective, providing both technical and non-technical readers with a clear and concise insight into a normally esoteric subject.

Wear and abrasion in industry

The South African Institute of Mining and Metallurgy and the Institution of Metallurgists (South African Branch) is to hold a colloquium on the topic of wear and abrasion of metals in February 1981. Papers are solicited in any of the following subjects.

1. Fundamental mechanisms of abrasion and wear
2. The effect of environment: high temperature, oxidation, and corrosive environments
3. Abrasion problems in the mining industry
4. Abrasion problems in the manufacturing and fabrication industries

5. New developments in abrasion-resistant metals
6. Application of hard facing.

In particular, the organizers would welcome contributions and suggestions from individuals and companies who can identify outstanding problems associated with abrasion. Steps will be taken for these and related problems to be discussed at the colloquium.

Offers of papers or contributions should include a provisional title and should be sent to the Secretary, South African Institute of Mining and Metallurgy, P.O. Box 61019, Marshalltown 2107.

Steel rolling

The International Conference on Steel Rolling sponsored by The Iron and Steel Institute of Japan will be held in Tokyo, Japan, from 29th September to 4th October, 1980.

The subjects to be discussed at the conference will be focused on the current problems of flat-rolling technology, the main themes being as follows.

1. Profile and shape control, and new techniques in flat

rolling.

2. Lubrication in flat rolling.
3. Direct rolling and hot-change rolling.
4. Controlled rolling of flat products.

Enquiries should be directed to Secretariat, International Conference on Steel Rolling (1980), The Iron and Steel Institute of Japan, Keidanren Kaikan 3rd floor, Otemachi 1-9-4, Chiyoda-ku, Tokyo 100, Japan.