BOOK REVIEWS

Analyses d'ouvrages

ANDERSON J.G.C., TRIGG C.F. — Case histories in engineering geology. *Elek. Science, publ., London, 212 p., 65 fig., biblio. (price: £ 12.50).*

Briefly described are 112 case histories of the application of geology to almost every facet of civil engineering; all the continents except Antarctica are represented. It is becoming increasingly accepted that civil engineering works must be in harmony with the environment in which they are placed. Many of the case histories illustrate how this harmony has been achieved, while others show the disadvantages, or even disasters, which ensue when geological factors are not taken into account.

ATTEWELL P.B., FARMER I.W. — Principles of engineering geology. *Chapman & Hall Ltd., publ., London, 1976.*

In recent years engineering geology has emerged as an academic discipline in its own right while retaining its traditional place as part of courses in both civil engineering and geological sciences. The present book, designed to cover both types of course, is concerned with basic principles as well as the practical applications of geological survey and analysis. The former covers the mechanical and physical response of rocks, rock masses and soils to change in environmental conditions, and the principles of groundwater flow. The core of the book deals with the collection of geological and technical data, its subsequent analysis, and applications to design.

(Tunnels and Tunnelling)

CHERKASOV G.N., SHVAREV V.V. — Lunar soil science: physico-mechanical properties of lunar soils (translated from Russian). *Israel Program sci. Transl., Jerusalem, & John Wiley and sons, New York, London, 1975, 174 p., 99 fig. (price $ 18.70; £ 9.35).*

The physical and mechanical properties of the lunar regolith as revealed by the "Surveyor" and "Luna" stations are summarized and brief descriptions are given of the chemistry and properties of the first lunar samples brought back to Earth.

EBERHARDT J.-P. — Méthodes physiques d'étude des minéraux et des matériaux solides (diffraction des rayons X, des électrons, des neutrons, microscopie électronique à balayage, spectrométrie des rayons X, des électrons, des ions). *Doin, édit., Paris, 1976, 524 p., 47 tabl., 343 fig., coul., biblio. (prix, relié: 580 F).*

L'ouvrage présente en un seul volume les principales techniques utilisant l'interaction des rayons X, des électrons et des neutrons pour l'étude des matériaux solides: diffraction des rayons X, des électrons et des neutrons thermiques; spectrométrie des rayons X (fluorescence X et micro-sonde électronique), des électrons (analyse Auger et ESCA), des ions (sonde ionique); microscopie électronique à transmission et à balayage.

JAEGER J.C., COOK N.G.W. — Fundamentals of rock mechanics (2nd ed.). *Chapman & Hall Ltd., London, 1976 (price £ 7.50)*

Since the first edition appeared in 1971, recognition of the importance of rock mechanics to the understanding of phenomena in geology, geophysics and seismology has grown enormously. New sections of the book include chapters on the application of rock mechanics to engineering and mining problems. Also included in the text is a comprehensive treatment of stress, infinitesimal strain, friction, elasticity theory, fluid pressure effects and mechanisms of failure; all these topics being linked to the actual behaviour of rock. It also gives the basic mathematical and experimental techniques and the principles and applications of field measurement which are prerequisites to the use of rock mechanics in practice.

(Tunnels and Tunnelling)

MARTIN P. — Essai sur la géotechnique *Masson, édit., Paris, 1976, 195 p., 25 fig., biblio. (prix, broché: 50 F).*

Cette mise au point des connaissances théoriques et pratiques en géotechnique comprend cinq parties: après la présentation, on trouve au chapitre I un aperçu historique, le site géotechnique, le choix d'une méthode; au chapitre II, la géotechnique, son étude fondamentale, ses relations avec les autres sciences, ses écoles, son évolution; au chapitre III, le géotechnicien, son rôle et sa responsabilite; au chapitre IV, l'étude géotechnique, son intérêt, l'esquisse d'une méthode générale; au chapitre V, le résultat géotechnique, l'accident géotechnique, le rôle de la géotechnique dans l'intérêt général. En annexe, l'auteur présente quelques aspects de la géophysique appliquée à la géotechnique.

TANK R.W. et al. — Focus on environmental geology: a collection of case histories and readings from original sources. *Oxford Univ. Press, publ., 1976, 552 p., 106 fig., 36 sketch-maps (price: £ 5.—).*

The 41 papers deals with the geological hazards that limit man's use of the physical environment (volcanism, earthquakes, tectonic movements, erosion, permafrost, sinkholes, floods), the mineral resources, energy crisis, and some problems of urban geology.

THOREZ J. — Practical identification of clay minerals. *G. Lelotte, édit., Dison (Belg.), 1976, 100 p., biblio.*

L'ouvrage propose un moyen rapide d'identification des minéraux argileux et des interstratifiés aux rayons X, sous la forme d'agrégats orientés. Il souligne, sous une forme synthétique, les caractères des principales variétés de minéraux argileux en fonction de leur comportement aux essais classiques d'identification (glycolage, glycérolage, saturations cationiques, chauffage). Il particularise les caractères de la réflexion basale (001) (position en angströms et forme); les clés d'identification combinent un code mnémotechnique simple et un jeu de couleurs, ce qui permet une reconnaissance et une différenciation au niveau des espèces et des groupes de minéraux argileux.