

Recent Developments in Mineral Dressing

A Symposium arranged by the Institution of Mining and Metallurgy, held on 23rd–25th September, 1952, at the Huxley Building, Imperial College of Science and Technology, London. Pp. xxviii + 766 + 36 plates. (London: Institution of Mining and Metallurgy, 1953.) 60s. (30s. to members); 8.50 dollars.

THIS volume brings together the thirty-nine papers, together with their discussions, which were presented in the symposium on this subject held in London during September 1952. It also contains the Wernher Memorial Lecture by Prof. A. M. Gaudin on "Radioactivity in Mineral Dressing". The more important aspects and technologies of this basic industry are covered expertly in these papers, which provide a rich mine of information not only for the technician in charge of such ore treatment in the field, but also for the research worker. In any presentation of mineral dressing, a subject which is still consolidating itself on a scientific basis, the reader may be somewhat disconcerted by the wide range of topics treated and the various levels at which these treatments are presented. Such catholicity is inevitable in the presentation of the variety of processing methods applied to the low-grade ores which supply the bulk of the world demand for engineering metals, rare earths, phosphates, diamonds and bullion, to name some of the main industrial products.

Some of the papers deal with laboratory methods developed in research on sub-sieve sizing, particle dynamics in simple and accelerated fields of gravity, electrostatics, and with considerations of lattice structure, surface chemistry and physics, and hydro-metallurgy. Other papers discuss commercial application and relate it to laboratory controls and their underlying principles. The scientist or practising engineer whose work calls for understanding of the behaviour of insoluble particles at all sizes down to a few microns will find much of interest in this symposium. A good index is provided, and the plates and diagrams are clear and informative.

E. J. PRYOR

Radioisotopes in Industry

Edited by John R. Bradford. Pp. viii + 309 (15 plates). (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1953.) 64s. net.

THE uses of radioisotopes to industry are now acknowledged, and this book is a collection of papers read at a symposium at the Case Institute of Technology, Cleveland, Ohio, in 1951. The fourteen chapters are all by different authors, many of whom have first-hand knowledge in this field. Six chapters describe the uses of isotopes in chemistry and industry, three are on laboratory design and isotope handling and two on health physics. There are also two appendixes of useful pile-made and cyclotron-made radioisotopes.

The papers are printed in the same form as presented at the conference. This unfortunately makes the book in many places repetitious, while at the same time some important subjects that would interest the industrial user are left out. For example, the principles of radioactive tracer dilution are explained by four separate authors, while there are six references to gamma radiography in all cases without details or critical assessment of the method. On pp. 25 and 97 will be found the same drawing and

caption to illustrate measurement of piston and cylinder wear. The reader is given no guidance on any of the methods of radiation detection. Something about beta- and gamma-ray counters, ionization chambers and scintillation detectors could well have been included. In the preface the editor states it is his aim to include new developments since the conference. There is no evidence of this in the text, and the bibliography does not list anything later than 1951. Several misprints exist that should have been corrected.

In spite of these shortcomings, a number of the papers are useful and informative to the industrial user, and references for wider reading are given. The book is illustrated by many drawings and also photographs of work in the United States in the Atomic Energy Commission's laboratories; it is stoutly bound and suitable for hard wear.

W. S. EASTWOOD

Atoms and Energy

By Prof. H. S. W. Massey. (Science in Action, 1.) Pp. 174. (London: Elek Books, Ltd., 1953.) 16s. net.

THIS is a popular account of the present state of nuclear physics, written with a genuinely scientific outlook. Drawing on the reader's knowledge of everyday mechanical effects and chemical actions, Prof. H. S. W. Massey explains the general principles underlying the release of nuclear energy in simple and non-technical language. From the discussion in the first chapter of the nature of the forces between nucleons to the concluding account of the numerous particles disclosed in recent cosmic-ray research, the line of thought is clear. Here are certain fundamental principles, some well established and some as yet imperfectly understood, which form the framework within which the nuclear physicist must of necessity work.

The great ion-accelerating devices are explained in principle rather than in detail, and the reader is told fully why they are used, and what they have so far revealed of the nature of nuclear forces. The many practical applications of nuclear energy, and its possibilities in the service of man, are discussed deeply enough to give a good general outline of the present position. Where matters outside the field of pure science are involved, the author presents the scientist's own point of view clearly and with vigour.

The book can be recommended as a useful guide for the general reader, chiefly because it goes so far to meet him on his own ground. Every educated citizen must be interested in the general trend of ideas in nuclear physics, and in the way they may ultimately react on his own way of thinking and his daily life; and both are explained clearly here. Little is said about the purely technical side, which such a reader will be only too glad to take for granted.

G. R. NOAKES

Possums

By Carl G. Hartman. Pp. xiii + 174. (Austin: University of Texas Press; London and Edinburgh: Thomas Nelson and Sons, Ltd., 1952.) 30s. net.

THIS splendid book epitomizes all that is known about the life and history of the American opossum. Beautifully written by the man who knows more about the opossum than anyone else, it is objectively scientific but enriched with a dry humour and directness of style that make it as fascinating to the layman as to the zoologist who specializes in mammals. Dr. C. G. Hartman discusses