

MAGNETIC MATERIALS

Magnetic Materials

By R. S. Tebble and D. J. Craik. Pp. xiv + 726. (Wiley (Interscience): London and New York, August 1969.) 240s.

THE most self confident of authors might be daunted by the prospect of selecting the content matter for a handbook of magnetic materials to be presented within the limited space of some seven hundred pages. Recent publications of comparable length have confined themselves to such restricted magnetic topics as ferrites or, even, soft ferrites. The chance therefore that any single reader will agree with the choice of content in the present case must be considered rather remote. This is even more true when it is realized that, of the whole volume, one half is given over to those technical and structure sensitive properties of the materials which determine their practical application, for here again there is much scope for disagreement among fellow magneticians regarding the relative importance of individual topics. Allowing for this necessarily personal choice in the content, however, this book will probably become a standard reference for physicists, electrical engineers and chemists for whom magnetic materials play a significant part in research or development work. It will occupy the middle ground between the handbooks of specialist magnetic materials and those recent theoretical works in which material properties have been introduced only as they are illustrative of the particular magnetic theories.

The introductory chapter is a short statement of the basic results of magnetic theory and is followed by a comprehensive and critical coverage of the intrinsic data of the various groups of magnetic materials; those elements, alloys, oxides, chalcogenides and the like, which can exist in magnetically ordered forms. The presentation is clear and well documented, suitable primarily for reference purposes, with numerous tables and graphs which would have been much enhanced by an extended subject index.

The second half treats those technical features which, in microwave, square-loop, permanent magnet and high permeability devices, depend on specific, frequently structure-sensitive, material properties. By quoting only the significant experimental details and theoretical results, it has been possible to collate much that was previously dispersed in original and review articles in a concise, well documented and readable manner. In view of this content, the price of the book will probably not be considered excessive. It is unfortunate, however, that a number of elementary errors have appeared in the final printing to give, for example, misquoted basic formulae and the transposition of some figure captions. A. J. POINTON

SUCCESS STORY

The CHEM Study Story

A Successful Curriculum Improvement Project. By Richard J. Merrill and David W. Ridgway. (Chemical Education Material Study.) Pp. 162. (Freeman: San Francisco, August 1969.) 24s.

CURRICULUM revision, of a radical kind, inevitably attracts strong personalities, each with his own favourite axe to grind; and the success of the whole enterprise largely depends on the central administration of the project. Discipline must be imposed if a coherent scheme is to emerge, but it must be sufficiently flexible to allow individual creativeness to flourish. This is the message of *The CHEM Study Story*. There is little chemistry here and there is no serious attempt to describe the detailed scientific and pedagogic problems that were encountered; the purpose is simply to describe the planning and progress of CHEM Study from its conception in 1959 at the instigation

of the American Chemical Society through all the stages of recruiting contributors, generating ideas, writing and revising the course material, to the publication and distribution of the final texts.

The authors, themselves participants in the project, convey the excitement of the pioneers, the frenzied activity of the early stages of writing and revision, the esprit de corps that developed among the members of the group, and their sense of pride in the nation-wide influence of CHEM Study. They have no doubt that theirs is a success story; indeed, they have tangible proof of success in terms of hard cash. The project, financed by a grant of \$2,800,000 from the National Science Foundation, has already returned, by the sale of books and films, more than that sum to the United States Treasury—and this in spite of the ingenious and laudable procedure, described at some length in the concluding section of the narrative, used by CHEM Study to phase itself out of existence, in order to avoid establishing a stronghold of orthodoxy that might discourage later initiatives in the field of curriculum reform.

The authors admit, however, that financial gain was not the purpose of CHEM Study, and they do give some account of an inconclusive evaluation of the project, based on a comparison of chemistry students who had been prepared for entry to college by CHEM Study courses with those who had not. They admit, too, that no assessment was made of CHEM Study's success in achieving its wider purpose of educating the great majority of students who pursue chemistry no further.

Extensive appendices, occupying more than half the book, include a list of CHEM Study personnel, details of published materials and films, sample achievement tests, and a selection from the correspondence that passed in the early days of the project between some of the principal contributors.

The authors hope that the book will be of value to those responsible for curriculum development in the future, and, for those who have the good fortune to undertake such work on a three million dollar budget, no doubt it will. E. J. HARTWELL

CATEGORIES OF DEPOSITS

Manual of Sedimentary Structures

By C. E. B. Conybeare and K. A. W. Crook. (Commonwealth of Australia, Department of National Development, Bureau of Mineral Resources, Geology and Geophysics, Bulletin No. 102.) Pp. x + 327. (Bureau of Mineral Resources: Canberra, 1968.) 40s 6d.

THE appearance within a matter of a few years of yet another book on sedimentary structures must surely bring groans to the lips of even the mildest spirited sedimentologist. This latest volume does, however, merit very serious consideration. Conybeare and Crook have taken a significant step forward in the study of sedimentary structures. They analyse and discuss structures in terms of a dual classification, one based on observable morphology only, and the other based on broad notions of genesis. This dual approach allows the authors to present, on the one hand, rational schemes for the recognition and description of sedimentary structures observable at outcrop or in hand specimen and, on the other, discussions of structures in terms of causes and environmental significance. Fact and theory are commendably kept apart in a subject where there is much confusion and uninformed thinking in matters of nomenclature and interpretation.

The morphological classification adopted by Conybeare and Crook is hierarchical and can be traced to ideas advanced in the field of soil science. Each hierarchical level in the classification represents a particular level of complexity of the observable elements which combine