NEW BOOKS

EXTRACTIVE METALLURGY, by W. H. Dennis (Philosophical Library, 371 p., 1965, $15).

In this volume, the author of two earlier books on the metallurgy of ferrous and nonferrous metals presents the principles of both ferrous and nonferrous extractive metallurgy and their application. This book can serve both student and practitioner as a convenient survey in depth of a very broad subject. While British ore resources and practice are emphasized, the author has included sufficient current American practice and problems to maintain balance.

The table of contents outlines 11 chapters with primary and secondary subheadings. Chapter 2 describes the regional occurrence of important ore minerals and their association and gives production figures by country from 1956 to 1960. Chapter 3, the longest of the book, is devoted to mineral dressing, from crushing and grinding of ores through the physical separation of their mineral constituents. A chapter on physical chemistry deals with thermochemistry and thermodynamic properties of oxides, sulfides and chlorides; however, very little further reference is made to equilibrium of reacting systems. Chapter 5 covers fuels, combustion, and the heat balance as a tool for process analysis. Refractories are discussed in Chapter 6.

Pyrometallurgy is covered in Chapter 7, which includes recent developments such as basic oxygen steelmaking, taconite pelletizing, and the zinc blast furnace. Two substantial chapters deal with hydrometallurgy (leaching of ores and associated operations) and electrometallurgy (electrolysis of aqueous solutions, molten salts, and oxides, and electrothermics). Two final brief chapters treat ingot casting, including continuous processes, and by-products. Four appendices of questionable value give conversion factors, physical properties of the elements, electrical units, and British standard screen sizes.

The many excellent line drawings are a strong point of this book, as are the tables of comparative performance data for a number of competitive processes. The grouping of material according to type of process is well chosen and effective. On the other hand, no complex reduction scheme such as the Kroll process for titanium or the Pidgeon process for magnesium is included, nor is reduction by carbon discussed in other than blast furnace processes. Several sign errors are annoying, but misprints are not excessive. The one equilibrium phase diagram in the book, for the alumina-silica system, is carelessly drawn and does not reflect the most recent (1959) research on the melting of mullite.

In summary, *Extractive Metallurgy* can be recommended to the student who seeks a current overview of this broad field, and to technical and management personnel who want a convenient reference to the technical aspects of metal-producing industries. However, the price of the book is unexpectedly high, and this factor will limit its appeal to many.

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ADVANCES IN EARTH SCIENCE, edited by P. M. Hurley (the M.I.T. Press, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1965, $20).

This is a hardback volume of 502 pages, organized in 5 main subject matter divisions and 16 chapters. The volume consists entirely of the individual contributions of an International Conference on the Earth Sciences, held at the Massachusetts Institute of Technology in September 1964. Therefore, each chapter within this volume is written by a different author.

Obviously, the individual contributors were selected for the purpose of surveying the various subject matter areas that made up the existing knowledge of the earth, its solar and its interplanetary relationships. In a general sense

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• *New Orleans Meeting . . .*

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a complete outline of the program in the March issue of the Journal.

Concurrently with the activities to assure an outstanding technical program for the 58th meeting, L. E. Brown and his Entertainment Committee have been organizing a schedule of social events in keeping with the tradition of hospitality that has been the hallmark of New Orleans meetings of the Society over the years.

Social events will get into the swing of things with a social hour and mixer in one of the large ballrooms of the Roosevelt Hotel on Sunday evening, May 7, 1967. In keeping with tradition, Monday evening, May 8, has been set aside for the Past Presidents' Dinner, which features the presentation of the Felix Pacquin key to the outgoing President of the Society. This event will be held in one of New Orleans' outstanding restaurants in accordance with the wishes of the distinguished group who comprise the Past Presidents Association. For other members and guests in attendance at the 58th Meeting, Monday evening will be an open date for those who wish to dine in the many restaurants that have made New Orleans cuisine famous throughout the world, to enjoy the beat of Dixieland Jazz, and to pursue other facets of the night life for which the Old French Quarter is renowned.

The annual Golf Tournament, long a standard feature of the spring meetings of AOCS will be played on Tuesday afternoon, May 9. F. C. Magne, Golf Committee Chairman, is arranging for play on one of the area's newer golf courses on the west bank of the river. To leaven the competitive spirit, a number of valuable prizes being collected by the Golf Committee will be awarded to the winners in the various categories of scoring. For the first time in a New Orleans meeting, the golf players will face competition of a different kind. The number of papers in prospect in the symposia and technical sessions will necessitate the scheduling of technical sessions on Tuesday afternoon, concurrently with the golf tournament.

The crowning social event of the New Orleans meeting will take place on Tuesday evening, May 9, with the banquet and dinner dance in the large International Room of the Roosevelt. A selected menu featuring dishes for which the Roosevelt chefs are famous will be served in the Hotel's unique style by its excellent waiters. Mr. Brown and his Entertainment Committee have been fortunate in signing an outstanding group of entertainers to provide a floor show featuring a variety of entertaining routines.

Music for dining and for dancing to follow will be provided by René Louapre's orchestra, whose entertainment will be well remembered from earlier New Orleans meetings. René's orchestra has provided music for so many of the Society's New Orleans meetings that the group almost qualifies as one of the AOCS traditions.

The closing social event of the meeting will be the Awards Luncheon, held at midday, Wednesday, May 10, 1967, in one of the Roosevelt ballrooms. A feature of this luncheon will be the presentation of the several recognitions and awards of the Society, and the awarding of prizes to the winners in the various categories of the golf tournament.

W. S. Singleton, Chairman of the Hotel Reservations Committee, reminds all members planning to attend the 58th Annual Meeting, May 7–10, 1967, that it is not too early to make reservations. To assure getting the accommodations of your choice, early reservations are recommended. Requests for reservations should be made directly to the Roosevelt Hotel and should note that these are in connection with the AOCS meeting. Please be sure to indicate the date of expected arrival and departure and the type of accommodations you wish to reserve (single, double, twin bedroom, suite, etc.).

As the program and events take shape, another outstanding meeting of the Society seems assured. The New Orleans Committee extends a cordial welcome to the Crescent City and looks forward to seeing each of the members on May 7–10.

• *New Books . . .*

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this purpose is achieved. However, earth science, like environment, is an all-inclusive title or term and in this sense the volume falls short in many areas. In fact, some subject matter areas are completely omitted.

The first three chapters constitute a brief survey on the general subject of solar physics and some of the earth's planetary and interplanetary relationships. The authors seem to have as their over-all objective that of surveying the "big ideas" in this introductory section. This reviewer finds Part I, entitled "The Earth's Environment," very readable.

In Part II, entitled "Atmospheric Motions," the authors have a similar purpose as revealed in Part I, that of surveying the existing state of the art. However, the section is completely dominated by the dynamic approach to meteorology. Both the terrestrial and the solar radiational aspects are omitted. Further, most aspects of micrometeorology and biometeorology are not mentioned. Though incomplete, those portions of meteorology discussed are covered in an eloquent, well-written manner.

Part III, like Part II, is dominated by the dynamic approach. Assuming the general objective to be that of surveying the current state of the art in oceanography, this section would fall short of the mark. However, the authors of this section write in a manner that is comprehensible to the nonoceanographer.

Parts IV and V, entitled "The Solid Earth," are well treated mathematically speaking. In fact, much of Part IV is not in keeping with the remainder of the volume in this reviewer's opinion, since it is written to fellow geophysicists primarily. Further, these sections are not free from omissions either. The most obvious is that of the very essential overburden—the soil, plus the movement and storage of the important life sustaining fluid—water.

While this reviewer takes a rather critical view toward this volume's completeness of the all-inclusive title, "Earth Science," it is granted that completeness plus thoroughness would be a most difficult task, if not impossible in one 500-page volume. In light of these inherent difficulties, the contributing authors, Editor Hurley and the organizers of the International Conference, are to be congratulated. This volume is a worthy addition to the professional bookshelf of anyone with interest in the earth sciences.

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Formula Index to NMR Literature Data, Vol. 2, edited by M. Gertrude Howell, A. S. Kende, and J. S. Webb (Plenum Press, New York, 516 p., 1966, $22.50).

This volume lists the compounds whose nuclear magnetic resonance spectra were reported in 1961–1962 and gives the literature references for each one. More than 5600 compounds are recorded. The listing consists of the empirical formula, the structural formula and the journal reference. Chemical shifts or other spectral data are not given. A larger type-size for the empirical formulae would have been advantageous, since the subscript figures are rather small for rapid reading. Aside from this point, the arrangement, printing and editing are excellent.

As in Volume 1, the number of long-chain fatty acids and other lipids is small because relatively few NMR spectra of lipids were published in the two-year period. The coverage of those published appears to be complete and includes fatty acids, esters, salts, and steroidal compounds.

The series will be a useful source of references to NMR data, not only for those specializing in this field of spectroscopy, but also for anyone who wishes to refer to NMR spectra in the literature.

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