Electricity : Direct and Alternating Current

By Prof. Charles S. Siskind. Second edition. Pp. xii+538. (London : McGraw-Hill Publishing Company, Ltd., 1955.) 43*s*.

THIS is an elementary text-book. As the author states in his preface, it "is intended for use in technical institutes, junior colleges, and short courses for non-electrical engineering students in universities . . ."

The first four chapters deal with direct current. Chapter 1 is concerned with basic ideas of conduction and the effects of electric current ; the second and third chapters deal with resistance calculations for conductors, and d.c. circuits, respectively ; the following chapter discusses basic theorems and laws, for example, those of Kirchhoff, and the superposition and maximum power transfer theorems. These are illustrated in terms of direct current ; but there is no mention of their application to the a.c. circuits, which appear in Chapter 5. As magnetism and electromagnetism are deferred until Chapter 6, this means that inductance is introduced before electromagnetism is touched upon. Then, unlike most British text-books, the chapter on electromagnetism has no mention of inductance. The remaining four chapters deal with d.c. measuring instruments, electromagnetic induction, generators, and motors.

The book on the whole is written quite clearly and is excellently produced. It would be suitable for National Certificate students. The advantage, however, of having such an American book (good of its kind as it is) in Britain does seem doubtful. The case against it is that it is expensive, there are British text-books available which cover the same material, and, of more consequence, the illustrations of usage and the units are those employed in American practice. As an example, flux density is quoted in kilolines per square inch, a quantity not commonly employed in British teaching. W. FRASER

Chemistry of Carbon Compounds

A Modern Comprehensive Treatise. Edited by Dr. E. H. Rodd. Vol. 3, Part A : Aromatic Compounds. Pp. xxiv+685. (Amsterdam : Elsevier Publishing Company ; London : Cleaver-Hume Press, Ltd., 1954.) 115*s*.

WITH the appearance of the first part of the third volume, this well-known compendium reaches that solid bed-rock of organic chemistry—the aromatic compounds. Although this is, of course, a well-trodden subject, recent work—for example, on 'benzyne' and the non-benzenoid aromatic compounds—shows that the field is by no means spent.

The volume begins with a series of articles by authorities which seek to survey the familiar facts in terms of modern concepts. Prof. C. K. Ingold contributes two such essays dealing with the benzene nucleus and orientation in electrophilic aromatic substitution ; the result is an object lesson in clarity and brevity. Prof. D. H. Hey and Dr. G. H. Williams perform the same function for nucleophilic and homolytic substitution, and Dr. N. Campbell ends this preliminary survey with a discussion of the formation and fission of the benzene nucleus.

The rest of the volume is devoted to a factual survey of the benzene series and simple derivatives thereof. This considerable task has been largely handled by Dr. W. J. Hickinbottom, with smaller contributions from Drs. J. Chatt and Z. E. Jolles. The presentation follows the pattern laid down in the previous volumes, although the enormous amount of material available has needed more drastic selection. More complex mononuclear derivatives and polycyclic and pseudo-aromatic structures are to be dealt with in Vol. 3, Part *B*. R. A. RAPHAEL

Organic Chemistry

By Dr. I. L. Finar. Second edition. Pp. xv+732. (London : Longmans, Green and Co., Ltd., 1954.) 40*s*. net.

THIS text, which is suitable for students reading for a university honours degree, was first published in 1951. It rapidly became popular, and a new edition was soon required. This popularity was possibly largely due to the author's plan of not adding the electronic theory as a tail-piece, but blending it in with the descriptive material, a plan which helps the student to make classifications and see inter-relationships and one that is conducive to an understanding of the subject. Conforming to the international rules of nomenclature, adopted in Britain by the Chemical Society in 1950, Dr. I. L. Finar has now written prefixes denoting substituents in alphabetical order. The new system was announced too late for inclusion in the first edition.

Among the other changes are enlarged sections on molecular orbitals, reaction mechanisms, stereochemistry, heterocyclic compounds and dye-stuffs. Thus the introductory section on molecular orbitals now occupies six pages. Dr. Finar, dispensing with mathematics, offers a simplified explanation of the concept and expounds its significance for the understanding of bonding problems. Thereafter, for instructional purposes, he uses it in conjunction with the valency-bond theory. These additions undoubtedly improve what was already a good book.

G. F.

The Moon

A Complete Description of the Surface of the Moon, containing the 300-inch Wilkins Lunar Map. By Dr. H. Percy Wilkins and Patrick Moore. Pp. 388+14 plates. (London : Faber and Faber, Ltd., 1955.) 63*s*. net.

THIS discussion of the physical features of the Moon's surface includes a chart in twenty-five sections on a scale of 32 inches to the Moon's diameter. It is reduced from the larger one by Dr. H. P. Wilkins published in 1952. Each section is accompanied by a description of the principal formations represented therein, the rectangular co-ordinates, elevations, and dimensions being given in most cases. The chart is based on visual and photographic observations, and the surface is shown in great detail. A number of large-scale drawings and reproductions of some excellent photographs supplement the chart. Considerable attention is given in special maps to features near the limb, which are difficult to study even under favourable conditions of libration and illumination.

The introduction summarizes the history of selenography and reviews the classification of the various types of formations. Several pages are devoted to an examination of suspected changes in the lunar surface that have been reported from time to time. A useful account of the techniques employed in lunar photography is given in an appendix by E. A. Whitaker.

The volume will provide for beginners an attractive introduction to the study of the Moon's surface ; for practised workers in the field it will serve as a useful supplement to earlier publications.