

**Kinetic Theory of Liquids**

By Prof. J. Frenkel. Pp. xi+488. (New York: Dover Publications, 1955.) Cloth, 3.95 dollars; paper, 1.95 dollars.

**T**HIS Dover edition is an unaltered and unabridged re-publication of the first English translation of Prof. J. Frenkel's book published by the Oxford University Press in 1946. The conventional text-book theory, which derives the properties of liquids by considering the transition between the liquid and gaseous states, is now known to be valid only at temperatures near the boiling point. Prof. J. Frenkel, in this book, develops the modern theory that, at temperatures near the crystallization point, a consideration of the analogy between a liquid and a crystalline solid leads to a better understanding and explanation of the properties of liquids. In particular, it is shown that liquids and crystalline solids, apparently so divergent in properties, differ fundamentally only in the degree of order of their structures.

Among other topics dealt with are those of viscosity, rigidity, surface tension, surface films, the polarization and conductivity of liquids, and the kinetics of crystallization. There is also an important chapter dealing with the properties of high-polymeric and rubber-like substances. The general treatment of the subject-matter, particularly the mathematical portions, is much to be commended for its logical, clear presentation. Many references are given, and the text is well illustrated with line diagrams.

In the preface, the author expresses the hope that the book will serve as an introduction to the new theory for physicists and chemists at large; but it is probably true that, for the run-of-the-mill scientist, a simpler exposition would fulfil this purpose rather better. However, the book should be invaluable, both as a text-book and a work of reference, to those interested in the liquid or quasi-liquid states of matter; to those engaged in research in this field, many interesting and fundamental problems are suggested.

**Principles of Organic Chemistry**

An Introductory Text in Organic Chemistry. By Prof. James English, Jr., and Prof. Harold G. Cassidy. Second edition. Pp. xiii+469. (London: McGraw-Hill Publishing Company, Ltd., 1956.) 49s.

**I**N writing this full-year course of organic chemistry for university students, the authors, professors at Yale University, have made a judicious blend of theoretical and factual matter. The book's twenty-four chapters describe a carefully made selection of the alkyl and aryl compounds generally studied in introductory courses, and in addition consider the several types of substituted acids, colour and constitution, stereoisomerism, carbohydrates, polysaccharides, proteins and plastics.

In the last chapter heterocyclic compounds are briefly treated. Alkyl and aryl compounds, after Chapter 5, are treated together. The compounds and reactions described, including those newly discovered which have especial instructional value, have been chosen more for their worth in giving a grip of theory than for their economic and industrial application. A general account of the electronic theory is given early in the book, then more theory is introduced, piecemeal, as a compound or reaction suitable for its illustration is met. Thus resonance, together with conjugation, is taken with the study of the olefines, the molecular orbital theory with acetylene, and

reversible redox systems with the study of the quinones. Reaction mechanism is stressed throughout.

Helpful historical notes dispersed throughout the text and valuable footnotes add to the interest of the book. In this edition the authors have rewritten sections to improve the clarity of presentation and have used curved arrows to indicate the courses of reactions. The book is written up to the level of the freshman intending to study chemistry seriously and is calculated to promote an understanding and enjoyment of the science.

G. FOWLES

**Bibliographie des langues aymará et Kicua**

Par Paul Rivet et Georges de Créqui-Montfort. Tome 51. Vol. 4. Pp. iii+957. (Paris: Institut d'Ethnologie, 1956.) 6000 francs.

**T**HE veteran French anthropologist, Prof. Paul Rivet, announced the publication of Vol. 1 of the great bibliography of the Aymará and Quechua languages of highland Peru, Bolivia and Ecuador, of which he is joint author, by presenting copies to the First International Congress of Peruvianists in Lima in 1951 and the Thirtieth International Congress of Americanists in Cambridge in 1952. The work is arranged chronologically, the items being listed under their years of publication, and Volume 4, which covers the years 1941 to 1955, brings it up to date. It also contains additions and corrections to the earlier volumes.

In addition to bibliographical notes, a few words of appraisal are given in appropriate cases, and some title pages are reproduced. The work is extremely comprehensive, and includes many items in other languages, for example Karsten's "Ceremonial Games of the South American Indians", because they contain some Quechua or Aymará words. It is a necessary work of reference for historians of the Andean region.

G. H. S. BUSHNELL

**Naturecraft in Australia**

An Introductory Handbook to the Fauna and Flora and to the Australian Environment for the use of the Bushwalker, Student, Field Naturalist, and Conservationist. Arranged and Edited by Thistle Y. Harris. Pp. xvi+264+24 plates. (Sydney and London: Angus and Robertson, Ltd., 1956.) 25s.

**M**ISS T. HARRIS, of the Sydney Teachers' College, has already done a good deal to generate interest in the Australian countryside. This volume, which is published under the auspices of the Wild Life Preservation Society of Australia, continues this useful work. In this book, which is edited and in part written by Miss Harris, a number of Australian naturalists have combined to describe (in 237 pages) the geology and natural history of a continent. The result is not, of course, a contribution to science; indeed it is a pity that valuable space is taken up with long lists of the Latin names of birds, fishes, and plants, because these lists give the reader a false impression that the book might be a naturalist's handbook. As a handbook "Naturecraft in Australia" could not be recommended. But it can be recommended as a book to stimulate interest on the part of Australians in their bush and their sea coasts; and its twenty-four photographic plates (which are of much higher quality than the text) will give the naturalist who is not able to visit Australia a vivid idea of some of the common insects and snakes and birds and plants which occur there.

E. ASHBY