feldspar group under high simultaneous pressures of water and carbon dioxide at elevated temperatures, is described extensively under consideration of the latest developments in this field. A detailed analysis of the silicate hydrates of the Zeolite and Permutit group also covers the dehydration of silicate hydrates and the various types of water binding.

Part IV, entitled "Solid state reactions and their ceramic use," considers the mechanism of sintering and correlation between structural defects and their reactions in the solid state, with special emphasis on the work by Hedvall. The material migration on the contact between reacting solids and systematic investigations on reactions in the solid state for silicate synthesis are some of the high lights of this general review of the present status of solid state research and development. This part further contains a description and discussion of the reactions in ceramic bodies and in hydraulic cements, with accent on the hydration of cements, including valuable comments on the colloidal theories of cement hardening.

The last part of this standard work is concerned with the silicate melts and industrial glasses and slags and describes the reactions in glass melting and the highly complex constitution of slags.

This monumental encyclopedia is characterized by an especially careful system of indexing. A 72-page subject index is followed by an index to minerals and rock species, a systematic index of the special silicate melt equilibria, an index of chemical compounds, and a 44-page author index for references. Each paragraph of the book is numbered, which permits quick reference and cross-reference. Clearly and systematically written and well printed, this will be used as a standard work for many years.

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Fundamentals of Ecology. Eugene P. Odum. Saunders, Philadelphia, 1953. xii + 384 pp. Illus. $6.50.

This is the first introductory textbook in ecology since the publication of "that noteworthy milestone" by Allee *et al.* in 1949. Where the trees were obscured by the forest, so to speak, here they are neatly arranged and the forest appears as an orderly grove; in short, Odum has done an excellent job in conciseness, and his title is fully justified. This is also the first effort to summarize the ecosystem or trophodynamic approach (characteristic of the Yale or Hutchinson school) to ecology, but adequate consideration is also given to the traditional habitat approach. Since the author is a terrestrial ecologist, it is natural that most of his examples and illustrations should be drawn from terrestrial studies and that marine ecology should be slighted somewhat (at least from the viewpoint of a marine ecologist). Almost six pages in the chapter on marine ecology are devoted to a series of figures from a standard textbook; these pages might better have been used for fuller discussion of some points. The section on commensalism is too short to be of real value. On the whole, however, the book presents a well-balanced view of the broad field of ecology, drawn from practical teaching experience.

The writing is clear, concise, and for the most part free from specialized terminology. The author's recommendation that *littoral* be abandoned as a term in marine ecology will not be well received, and his use of *biogenic* for "dissolved salts vital to life" will startle marine ecologists, who have used "nutrient salts" in this meaning and adhere to the long-established meaning of *biogenic* in its geologic sense as applying to inorganic materials or structures formed by biological agency. There are few such slips, however, aside from the author's apparent inability to spell people's names correctly, and these can be corrected in a new edition. The illustrations are clear and well chosen, and there is a good bibliography and index.

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Nuclear Moments. Norman F. Ramsey. Reprinted in part from ***Experimental Nuclear Physics,*** vol. I, E. Segrè, Ed. Wiley, New York; Chapman & Hall, London, 1953. 169 pp. Illus. $5.

Since World War II, a large number of papers have appeared in the literature on research in radio- and microwave-frequency resonance phenomena. *Nuclear Moments* by Norman F. Ramsey performs a service, which has long been in demand, of describing the basic achievements of various resonance experiments dealing with the magnetic dipole and electric quadrupole moments of stable nuclei. Along with liberal references, complete tables of nuclear moments and related properties, an appendix on nuclear shell structure, and a review of the theory of nuclear moments as applicable to any experiment, the author devotes the main discussion to a correlation of various experimental results obtained by different workers. In short order the reader is given an excellent survey and a pertinent description of topics of current interest that will serve as a useful guide in seeking further details in the scattered literature.

The book is written in five parts. Particular emphasis is placed on resonance studies of chemical structure and the solid state, in the interest of many who are currently engaged in such work. Two introductory chapters present the fundamental definitions and properties of nuclear moments. A precise formulation is given of the types of interactions between the nucleus and surrounding atomic and molecular fields. The next chapter opens the topic on experimental methods by a review of molecular-beam nonresonance experiments, followed by a discussion of present-day molecular beam and neutron beam resonance techniques. The next part outlines the techniques and