The attempt to oversimplify the picture, which is so often necessary in this type of work, makes for a handful of lapses in rigor, such as the erroneous contention that cubic iron readily slips along planes as a means of explaining the symmetry observed in the early Bitter patterns. On the whole, this book can hardly be recommended as a primer in domain theory but will undoubtedly prove a fine reference to workers in the field as an exposition of an important and active phase of magnetic effects arising from domain phenomena which is, in fact, the avowed purpose of the monograph series of which this book is a part.

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The Kinetic Basis of Molecular Biology. Frank H. Johnson, Henry Eyring, and Milton J. Polissar. Wiley, New York; Chapman & Hall, London, 1954. vii + 874 pp. Illus. $15.

Theories and techniques of modern physical chemistry are just beginning to assume an important place in the investigation of biological systems. This book is the most advanced and most useful presentation of the applications of physical chemistry to biology that has appeared. It is a valuable guide for all whose research approaches problems of living systems at the molecular level, particularly problems of a dynamic nature for the book emphasizes the application of classical and modern chemical-kinetics. It provides a source of prototype mechanisms, an extensive collection of reference material, and, most important of all, a solid introduction to the philosophy of present-day physical chemistry presented by men familiar with both the power of that subject and the complications encountered in biological systems.

The book breaks down into three parts. The first surveys rapidly, and probably inadequately for many natural scientists, the theories of modern physics and chemistry. Only Chapter 1, in which the theory of absolute reaction rates is derived, is essential for reading the remainder. The middle section is based on the well-known work of Johnson and Eyring and their collaborators on bioluminescence, but is extended to cover a wide variety of other problems more or less closely related to problems which have appeared in bioluminescence.

The third section examines permeation and diffusion phenomena in living systems, including extensive discussions of muscular contraction and nervous function. While there is less original material in this section, modern theories of the phenomena are presented on a more comprehensive and more satisfactory theoretical framework than has previously appeared. In particular, the discussions of active ion transport are the best thus far.

The book is uneven, somewhat special, and not comprehensive. Specialists reading discussions of subjects in their own fields will occasionally be dissatisfied, if not antagonistic, to detailed interpretations for little attempt has been made to examine alternative theories and frequently it seems that subjects have been "shoehorned" into a preconceived and inapplicable framework. Such objections are probably not particularly important. Although the authors have stated as their purpose the interpretation of a representative collection of biological phenomena, their major success lies not in this direction but in the procedures of thought and technique for the use of physical chemistry, implicit throughout the book. Especially important in this direction are the frequent uses of idealized systems that emphasize only the most essential molecules and characteristics of complicated systems, a technique exemplified in the authors' treatment of nerve processes. Undoubtedly many of the specific interpretations will not stand the test of time. The general methodology, on the other hand, is well tested and here to stay. The natural scientist will find this a useful handbook of application and a stimulating source of new ideas.

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Acoustics. Leo L. Beranek. McGraw-Hill, New York–London, 1954. x + 481 pp. Illus. $9.

Those who learned their acoustics from textbooks dated before about 1915 will gasp when they compare this up-to-date textbook with those of yesteryear. They will look in vain for the familiar chapters on the theory of vibrating strings, rods, bars, plates, and pipes, but they will find that acoustics has acquired a "new look" and many new sounds during these past four decades. Modern acoustics, in many respects, began in 1915 with the advent of electronics and the high-quality microphone. Beranek's book begins where the classical books ended. It is primarily a treatise of modern acoustics, a thoroughly teachable and practical book that can be commended to both professional and amateur acousticians. The acoustial engineer, and even many of those who retain him, will find ready solutions to many problems concerned with noise and electroacoustical devices.

Chapter 1 gives a brief introduction to modern acoustics and summarizes relevant American Standards acoustical definitions and terminology. Chapter 2 presents solutions of the wave equation in two parallel columns; the one-dimensional derivation in the first column and a juxtaposed three-dimensional vector derivation in the second column. Chapters 3–5 deal comprehensively with acoustical circuits, elements, radiation, and directivity patterns. Chapter 6 is a good compendium of available high-quality microphones, their characteristics and uses. Chapters 7–9 are a rich storehouse of descriptions, formulas, and design charts of the principal types of loudspeakers. High-fidelity fans will find this material helpful in selecting or constructing these crucially important parts of their high-fidelity radio receivers and phonographs, for example, page 212 gives directions for the design of a closed-box baffle for a high-quality loudspeaker, and page 242 gives practical design data for