a bass-reflex. (The directions are for those who wish to know *why* as well as *how*.) Chapter 10 deals with architectural acoustics, with emphasis on wave acoustics and sound insulation. Chapter 11, which deals with noise control, will be found extremely useful for the reduction of industrial noise. Chapter 12 is a good summary of acoustical measurements, especially those essential for noise surveys. The concluding chapter contains an up-to-date account of hearing, speech intelligibility, and pertinent psychoacoustic criterions. These criterions are as yet tentative but they will be welcome and useful to the acoustical engineer and to all those who are concerned with noise control.

The mks system of units is used throughout the book. Although many physicists and engineers may believe that this choice is not justified in view of the widespread use of cgs units, it is apparent, especially in Chapters 3 and 10, that simplicity results from the choice of the mks system. But for one who has been steeped for two score years and more in cgs units, the mks ones are distasteful pills for a mild disease. Beranek has sugar-coated most of these pills by adding in parentheses the more familiar cgs units.

The drawings and illustrations are well chosen and executed and supplement the text admirably. Throughout the book typical examples involving practical design are worked out in detail, and these are often followed by other useful examples and problems that the student is expected to solve. Acoustical engineers, as well as students and others interested in acoustics, will be greatly indebted to Beranek for this useful and well-written book.

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Chemical Constitution. An introduction to the theory of the chemical bond. J. A. A. Ketelaar. Trans. by L. C. Jackson. Elsevier, Houston, Engl. ed. 1, 1953. 398 pp. Illus. $6.50.

The purpose of this book, according to the author, is to so complement the standard textbooks of organic and inorganic chemistry that it will enable students to convert the large volume of chemical information into a single, coherent body. In this he has completely succeeded and thus has contributed a significant advance to the integration of chemistry on a graduate level.

The first chapter serves to set forth the four types of chemical affinity (ionic, atomic, metallic, and Van der Waals) upon which the division of subject matter is based. In the next chapter the concept of the ionic bond, developed on the basis of electrostatic attractive forces between charged spheres, is applied to ionic complexes as well as to simple salts. The third and longest chapter is a wave-mechanical development of the covalent bond, with many examples and applications to complex compounds, conjugation, and the theory of color. The interatomic attractive forces and various properties of metals are developed in the following chapter with the analogy of the electron in a box and the concept of Brillouin Zones. In the fifth and last chapter Van der Waals binding, explained as a combination of Keesom orientation energy, Debye inductive effects, and London dispersion forces, is applied to volatility, solubility, and hydrogen bonding.

This book has many excellent examples and correlations of theory and fact. Many of the relationships described, particularly in connection with ionic and metallic binding, are too frequently omitted from textbooks in this country. The author points out the importance of Coulomb forces, rather than electron pairing, as the source of exchange energy, and emphasizes this point by substituting a newly coined term, *atomic bond,* for the more familiar *covalent bond.*

It is unfortunate that such a useful book is marred by many errors. The English expression is so awkward that the meaning is sometimes obscured. In some cases lack of clarity is due to the omission of details and explanations required in the coverage of such a broad subject in a relatively small number of pages. Many authors are referred to without specific literature references. One might disagree with the classification of the hydrogen bond as a Van der Waals, rather than an ionic, type of bond. One might also wish that more space had been devoted to molecular refraction and polarizability, acids and bases, electrophyllic and nucleophyllic properties, and the role of *d*-orbitals in the formation of coordination compounds.

The main usefulness of this book lies in its value as a survey and integration of chemical theory and fact. In my opinion, it cannot be used by students without previous courses in organic, inorganic, and quantum chemistry, unless extensive simultaneous use is made of standard references in these fields.

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The Kidney. A Ciba Foundation Symposium arranged jointly with the Renal Association. A. A. G. Lewis and G. E. W. Wolstenholme, Eds. Little, Brown, Boston, 1954. xvi + 333 pp. Illus. + plates. $6.

This is a verbatim account of the proceedings of an international symposium held in London in July 1953. Not since 1935, when the Minneapolis symposium of a lustrum earlier became *The Kidney in Health and Disease,* has any volume appeared of substance and merit comparable to Ciba's *The Kidney.* Interestingly, there was no individual who contributed to both of these symposiums.

Twenty papers are allocated in five parts: I, "Structural and functional relationships in the kidney" (Oliver, Raaschou, Darmady, Wirz); II, "Tubular functions other than the regulation of acid-base balance" (Bradley, Taggart, Lambert, Reubi); III, "Renal share in the regulation of acid-base balance" (Robinson, Pitts, Berliner, Sanderson); IV, "General problems of electrolyte excretion" (Merrill, Le