defined and extensively used, but the essential reason for its introduction is nowhere clearly stated, or could not be found by this reviewer. An orderly treatment of thermodynamic principles might well have formed the first chapter, since an extensive discussion of fugacity is given in the present first chapter.

This text may prove stimulating to small classes of special students under the direction of experienced instructors. In the case of large, heterogeneous classes, as are usually found today it will be of considerably less value.

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The electronic theory of acids and bases. W. F. Luder and Saverio Zuffanti. New York: John Wiley; London: Chapman & Hall, 1946. Pp. ix + 165. (Illustrated.) $3.00.

This little book, dedicated to G. N. Lewis and read in manuscript form by him before his death, has as its principal thesis the propagation of Lewis' electronic theory of acids and bases. In reading the book one has the feeling that here are two ardent disciples of Lewis who are attempting enthusiastically to spread the true gospel. The 13 chapters are entitled: "Historical Background," "Atomic Orbitals and Valence," "The Electronic Theory of Acids and Bases," "Electrophilic and Electrodotic Reagents," "Acidic and Basic Radicals," "Neutralization," "Titration With Indicators," "Displacement," "Catalysis," "Acid Catalysis," "Base Catalysis," "Alkoxides as Catalysts," and "Conclusion."

By way of illustrating the points they wish to make, the authors have collected together and organized in a readable fashion a large amount of interesting and instructive data. Every chemist could benefit by reading this book because of its many suggestive and provocative postulates and theories. However, unless one reads critically, he may conclude that the electronic theory of acids and bases constitutes the whole and complete story of the phenomena considered. To test the accuracy of the theories and data presented, the reviewer made a detailed study of the authors' description of one base-catalyzed reaction, the aldol condensation of acetaldehyde (p. 138) (this being picked more or less at random from the large number in the book). Here we are told that the catalysts used are bases such as acetates, carbonates, pyridine, and amines, and the reference given is to a paper by the noted Oxford physical chemist, R. P. Bell. In that paper, however, Bell states specifically that the aldol condensation of acetaldehyde is catalyzed only by the hydroxide ion, and that acetate ions cannot catalyze the reaction by themselves but only to the extent that hydroxide ions are produced by hydrolysis. Luder and Zuffanti give no hint that any other mechanism of aldol condensation is possible, yet at least one other slightly different mechanism which fits all the facts can be imagined. Nor do they indicate that at low hydroxide-ion concentration the simple mechanism is no longer valid.

One is struck by the practically complete lack of quantitative data, graphs, and equations. No rate equations, for example, are given, despite the fact that nearly one-third of the book is devoted to the subject of catalysis. Nevertheless, read critically and with mental reservations, the book has much to contribute to the chemical thought of the day.

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Analytic geometry and calculus. John F. Randolph and Mark Kac. New York: Macmillan, 1946. Pp. ix + 642. (Illustrated.) $4.75.

The authors of this text write in a vigorous, clear, and simple manner, dropping many unnecessary terms, yet pointing out many pertinent facts which are often neglected.

Although the material in the calculus is essentially traditional, the authors break new trails in handling many details. Maclaurin is not mentioned in connection with Taylor's theorem. The inverse trigonometric functions are defined as one-valued (with no reference to principal values). The sections on analytic geometry are reduced to a minimum, but are carefully and effectively handled. The device of leaving some difficult details to more extensive works and of putting much more in small print leaves a consecutive course in large print devoted chiefly to technique and to clarification of the essentials. A more than usual emphasis is placed upon discontinuities and limited domains. Many of the proofs are particularly gratifying in their rigor and simplicity. Duhamel and all his works are ignored. Gauss's rules for approximation are developed, but no section discusses significant figures or Newton's method. The figures are in most cases excellent.

The only serious criticism of items that have been included concerns the authors' random use of "f" (in isolation). This sometimes refers to the whole correspondence, sometimes to the value assumed by the dependent variable. The omissions are not easily condoned. In clearing out the rubbish, the authors have retained subnormals and subtangents, yet nothing is said concerning hyperbolic functions, simple harmonic motion, the catenary, convergence of series, angular velocity and acceleration, orthogonal curves, vectors, or such engineering notions as deflection of a beam or modulus of a spring.

Despite the many unexpectedly good features of this text, the course remains pretty thin in applied content. For most physicists and engineers, one might demand a more nourishing fare.

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Organic reactions. (Vol. III.) Roger Adams. (Ed.-in-Chief.) New York: John Wiley; London: Chapman & Hall, 1946. Pp. viii + 460. (Illustrated.) $5.00.

This volume carries out the plan of the first two volumes of the series, also edited by Roger Adams with the collaboration of Werner E. Bachmann, Louis F. Fieser, John R. Johnson, and H. R. Snyder. It comprises critical discussion of 9 classes of organic reactions. As stated in the preface to the series, "The subjects are presented from the preparative viewpoint, and particular attention is given to limitations, interfering influences, effects of structure, and the selection of experimental techniques. Each chapter includes several detailed procedures illustrating the significant modifications of the method. . . . When all known examples of the reaction are not mentioned in the text, tables are given to list compounds which have been prepared by or subjected to the reaction."

The chapters of the volume are as follows: 1, "The Alkylation of Aromatic Compounds by the Friedel-Crafts Method," by Charles C. Price; 2, "The Willgerodt Reaction," Marvin