While several of the plates reproduced by Shaler are excellent, notably the one of a pebble-beach and the pictures of breakers on the shore of Martha's Vineyard, some of the cuts in the text are decidedly poor. The small woodcut intended, according to title, to represent a sun spot, and another of a portion of the moon's surface, should certainly be replaced by something better in future editions.

In the preface of the volume the statement is made that it is intended for beginners in the study of the earth's history. It seems to the present writer that this claim is too modest, as the book can be used with both pleasure and profit by the advanced student and even by the most experienced veteran in physiography, as well as by the novice. In fact, the many suggestions and original observations, strewn thickly along the general pathways that are followed, are among the greatest charms of the book. Some of these branches of the general current of thought may perhaps lead the beginner astray, but to more experienced explorers they serve to show how vast is the space surrounding the known.

In every library there should be a new shelf for romances of nature, and one of the first books to be placed thereon, whether in the home, school, university or circulating library, should be the 'Outlines of the Earth's History.'

ISRAEL C. RUSSELL.

Die Chemie in täglichen Leben. Gemeinverständliche Vorträge. By PROFESSOR DR. LASSAR-COHN. Hamburg und Leipzig, Leopold Voss. 1898. Third Edition. 8vo. Pp. vii+317.

A German book on chemistry which has experienced three editions in as many years, and translations of which into several foreign tongues have been made or are in preparation, as the author's prefaces inform us, must have struck a responsive chord in public favor.

These lectures on chemistry in daily life are twelve in number. They cover a wide range of topics; foods, illuminants, explosives, leather, coal-tar colors, ceramics, Röntgen rays and many other subjects are discussed.

At times the grouping of themes presented in one lecture seems rather incongruous. Thus, in one instance, lecture twelve, metallic alloys, alkaloids, anæsthetics, anti-pyretics and disinfectants all come in for consideration.

This appears to be rather a varied menu for an intellectual repast, especially if one intends following the author's admonition and dispose of it at one sitting. For the preface says: "As the individual lectures had the customary duration of one hour a corresponding amount of time ought to be devoted to their perusal."

The style is terse and clear; typography and paper good.

FERDINAND G. WIECHMANN.

Introduction to the Study of Organic Chemistry. By JOHN WADE, B.Sc., Senior Demonstrator of Chemistry and Physics at Guy's Hospital. London, Swan, Sonnenschein & Co. 1898.

The author has adopted a method of treating the subject which is exactly the reverse of that commonly employed. He starts not with the simple hydrocarbons, but with some of their derivatives, and does not give the properties, etc., of the hydrocarbon until he has taken up the complex derivatives. As he states in the preface, 'the book proceeds from the familiar to the unfamiliar.' The application of this method can, perhaps, be best shown by an extract from this preface: "The first substances to be studied are the typical alcohol and acid akin to the inorganic bases and acids, and the study of these leads to the theory of radicals. The other simple alcohols and acids are next dealt with, and the ideas of homology and isomerism introduced. The construction of the net-work of cross connections typical of organic chemistry is now commenced, with the aid of the ammonia derivatives and cyanogen compounds, and the necessity of the theory of structure shown. The structural formulæ of the various compounds having been duly established, the simple aldehydes are introduced, and with them the conception of polymerism; then the simple ketones and secondary alcohols, with the theory of position isomerism; and the iso-alcohols and acids, with the theory of branching-chain isomerism. Finally, the simple hydrocarbons are dealt with, and the preceding work codified in the theory of substitution."

It is difficult to see how one can gain a clear idea of the more complex substances without

an understanding of the simpler member from which it is derived. A knowledge of the present conception of the structure of benzene is certainly necessary in order to understand the isomeric compounds and the formation and reactions of the complex derivatives. The subjects are quite fully developed, with charts to illustrate the relationship of substances to one another, and methods of preparation, for use in a laboratory, are given in an appendix, as is also a short review of the general method of testing for the commoner organic substances. The book is intended evidently for men preparing for Board examinations.

J. E. G.

SCIENTIFIC JOURNALS.

The Journal of Physical Chemistry, June: Molecular Weights of Liquids, two papers by Clarence L. Speyers. Benzilorthocarboxylic Acid, by C. A. Soch; a study of the two modifications. Analysis of Aqueous Alcohol, by Chester B. Curtis; the method proposed is titration with toluene until milky turbidity appears. The results are as accurate as the pycnometer tests, are simple and rapid. The delicacy of the test increases rapidly with the strength of the alcohol. The Benzoyl Ester of Acethydroxamic Acid, by Frank K. Cameron; a study of the two modifications. Boiling-point Curve for Benzene and Alcohol, by E. F. Thayer. October: Benzaldoxime, by Frank K. Cameron. The Isothermal Pressure-surface in the Case of Two Single Salts and one Double Salt, by F. G. Donnan. The Molecular Weight of Orthorhombic, Monoclinic and Plastic Sulphur in Naphthalene and Phosphorus by the Freezing-point Method, by Samuel D. Gloss; from the boiling-point method in carbon disulfid and in benzene, Orndorff and Terasse conclude that orthorhombic and monoclinic sulfur have the same molecular weight; Blitz by the vapor-density method reaches the same result for orthorhombic and plastic sulfur; the author also concludes from a series of determinations by the freezing-point method, using naphthalene and phosphorus as solvents, that the molecular weights of the three varieties of sulfur are the same. The Variance of the Voltaic Cell, by Wilder D. Bancroft; the object of this paper is to show the way in which the phase rule should be applied to reversible cells, and to call attention to the usefulness of the theorem of La Chatelier in predicting the change of the electro-motive force with the change of the parameters.

The October number of the *Bulletin of the American Mathematical Society* contains an account of the Fifth Summer Meeting of the Society, by the Secretary: 'Note on the Generalization of Poincaré and Goursat's Proof of a Theorem of Weierstrass',' by Professor W. F. Osgood; 'Supplementary Note on a Single Valued Function with a Natural Boundary, whose Inverse is also Single Valued,' by Professor W. F. Osgood; 'Note on the Periodic Developments of the Equation of the Center and of the Logarithm of the Radius Vector,' by Professor A. S. Chessin; 'The Theorems of Oscillation of Sturm and Klein (Third Paper),' by Professor Maxime Bôcher; 'Notes;' and 'New Publications.' The November number of the *Bulletin* contains a report on the Cambridge Colloquium, by Professor H. S. White; the six lectures on 'Selected Topics in the General Theory of Functions,' delivered before the Colloquium by Professor W. F. Osgood; a report of the Boston meeting of Section A of the American Association for the Advancement of Science, by Professor ames McMahon; 'Notes;' and 'New Publications.' Each of the two numbers fills 56 pages.

The *American Journal of Science* for November contains the following: 'Irregular Reflection,' by C. C. Hutchins; 'Occurrence of Sperrylite in North Carolina,' by W. E. Hidden; 'Description of a Fauna found in the Devonian Black Shale of Eastern Kentucky,' by G. H. Girty; 'Separation of Nickel and Cobalt by Hydrochloric Acid,' by F. S. Havens; 'Contributions to Paleontology,' by F. A. Lucas; 'Value of Type Specimens and Importance of their Preservation,' by O. C. Marsh; 'Origin of Mammals,' by O. C. Marsh; 'Causes of Variation in the Composition of Igneous Rocks,' by T. L. Walker; 'Relation between Structural and Magneto-optic Rotation,' by A. W. Wright and D. A. Kreider.