

for the passage of the vapors of the solvent. A perforated porcelain disk placed inside the adapter serves to support the alfalfa meal, which is contained in the inside tube.

After the inside tube and adapter have been filled with the substance to be extracted, they are inserted in the outside tube while in a horizontal position and then connected with the distilling flask and clamped. Into the upper end of the outside tube is fitted a bulbed reflux condenser. When the solvent is brought to boiling on the water bath, the vapors pass up between the walls of the two glass tubes, and after being condensed drop on the material in the inside tube, saturating it, and are then returned to the distilling flask from the lower end of the adapter.

The special advantages of this form of extractor or percolator are: The large capacity coupled with its simplicity and cheapness of construction, the convenience of emptying and refilling, together with the fact that the material is extracted at practically the temperature of the vapor of the solvent. Only one liter of solvent is required to extract more than two liters of material. When used in extracting fine alfalfa meal with alcohol, four or five hours are required before the extraction is complete.

The extractor has been in almost daily use for over a year, with entire satisfaction. If the outside glass tube is clamped too tightly it may break when the hot vapors come in contact with it. This difficulty is obviated by using a copper tube of the same dimensions. It was found advantageous to surround the outside tube with a strip of felt cloth in order to conserve the heat during extraction. C. A. JACOBSON.

RENO, NEVADA.

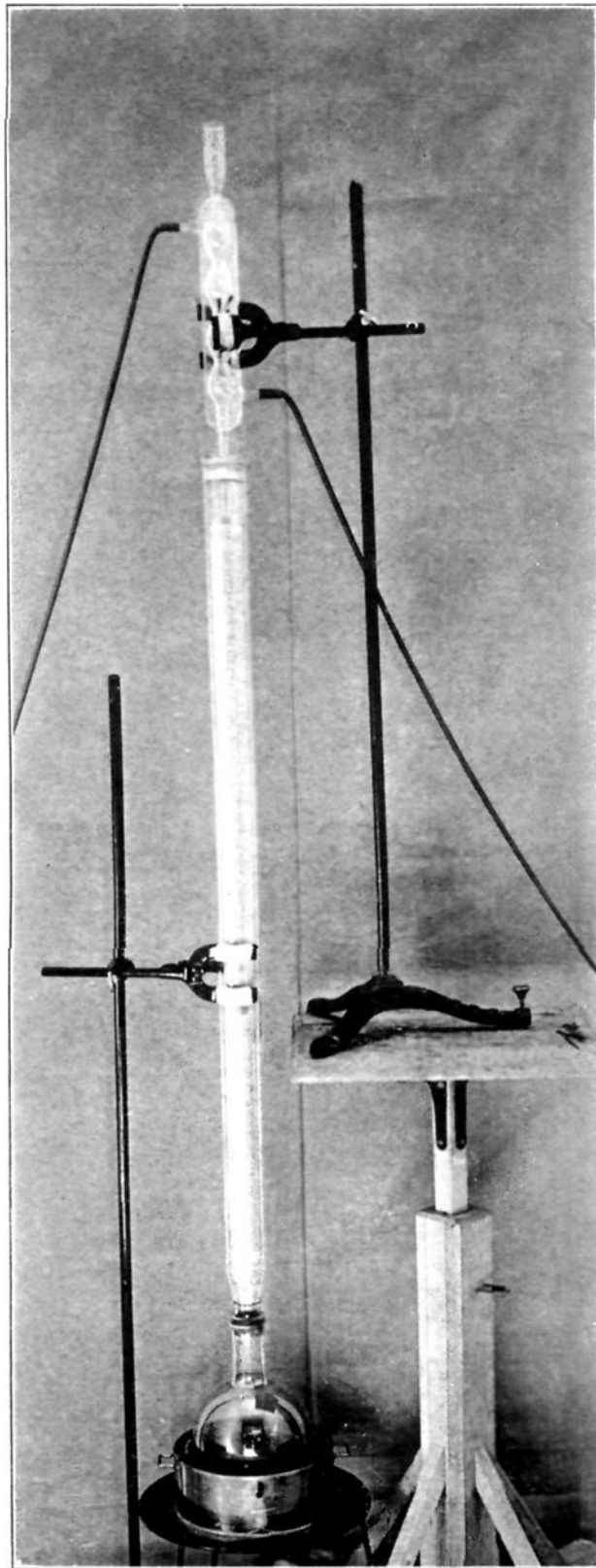
---

### NEW BOOKS.

**Chemistry, an Elementary Textbook.** By WILLIAM CONGER MORGAN AND JAMES A. LYMAN. The MacMillan Co., New York. Pp. xiv + 429. Price, \$1.25 net.

The ideal of the authors of this book is that "the student should never be allowed to get the idea that chemistry is a science that dwells inside of laboratories and acts chiefly in beakers and test-tubes. He should be conscious continually of its presence about him on every hand, in nature, in the home, and in the whirring world of industry." They "have tried to bring out the *humanistic* side of the science." In following these ideals the mistake has not been made of presenting chemistry as a descriptive science only. Much pains is taken to give in a clear and forcible manner the underlying theories and principles of our science. Rather more attention is given to reversible reactions and questions of equilibrium than is customary in an elementary textbook.

On p. 16 the authors follow a number of other authors in designating exothermic reactions as "spontaneous" and endothermic reactions as





"forced." The true distinction is that in an exothermic reaction the reacting substances give heat to surrounding objects as it proceeds, while in an endothermic reaction they absorb heat from other substances. So long as the temperature is maintained constant one class of reactions is just as "spontaneous" as the other and in each class the speed of the reaction changes in essentially the same manner with the concentration of the reacting substances and with the temperature.

In the statement on p. 80 that "if an insoluble substance is formed equilibrium is impossible" the authors seem to have overlooked the fact that electrolytes are probably never wholly insoluble and that while the equilibrium is displaced very far to one side in the precipitation of difficultly soluble salts, there is still a true equilibrium which is very important in considering problems of analytical chemistry. However, the statement of the text is possibly justified from a pedagogical standpoint in a text to be used in high schools and by Freshmen.

The book is well illustrated. A considerable number of half-tones from photographs of natural objects and of portraits add to the human interest and the inclusion of several pictures from the Pacific Coast adds to the value of the book for Western students and does not hurt it any for others.

W. A. N.

**Traité de chimie générale.** Par W. NERNST. Ouvrage Traduit sur la 6<sup>e</sup> Édition Allemande, par A. CORVISY. Première Partie: Propriétés Générales des Corps; Atome et Molécule. 510 pp. Paris: Libraire Scientifique A. Hermann et Fils. 1911. Prix, 12 francs.

This book is a translation of the first half of Nernst's *Theoretische Chemie vom Standpunkte der Avogadro'schen Regel und der Thermodynamik*, familiar to all students of chemistry, either in the original or in the English translation. The sixth German edition, which was published in 1909, differs from the earlier editions, notably in the addition of chapters on radioactivity and on the atomic theory of electricity, and in important additions to the chapter on the colloidal state, bringing these subjects down to date. Any comment on the book itself, already reviewed in its earlier editions in THIS JOURNAL, is unnecessary, save to add that the additions increase the value of the book as a text-book for advanced students and for reference.

JAS. LEWIS HOWE.

**Grundriss der Kolloidchemie.** By WO. OSTWALD, Privatdozent an der Universität Leipzig. Zweite völlig umgearbeitete und wesentl. vermehrte Auflage. Erste Hülft. Dresden: Theodor Steinkopff. 329 pp.

The briefness of the period which has elapsed since the first edition of this work appeared is indicative of the esteem in which it is held. The present edition is much enlarged and amplified in every way and many valuable figures have been added.

At the present time, when the vast field of colloid chemistry is just

beginning to yield up its secrets to the indefatigable inquirer, and when we can dimly foresee the stupendous significance which this new knowledge may come to have in "pure" science, in the industries, and in medicine, the appearance of a compendium of this character, containing an impartial statement of a wide range of facts and of the hypotheses which have been erected upon them, is singularly opportune. This book should unquestionably find a place upon the library shelves of every chemical or biological laboratory, whether devoted primarily to the investigation of industrial problems, or to the investigation of problems of medicine or of "pure" science. Other works, which are now appearing with frequency, aim at surveying relatively restricted portions of this great field. The present work embraces the entire field and is of as much interest to the rubber chemist as to the protein chemist, to the medical chemist as to the physical chemist.

The literature references are very exhaustive and form not the least valuable portion of the book. The paper and print are excellent and both the author and the publisher are to be congratulated upon the neat and workmanlike arrangement and appearance of the book. A second part is promised which will contain, among other chapters, a discussion of the optical and electrical properties of colloidal systems and a description of the experimental methods of colloid chemistry.

T. BRAILSFORD ROBERTSON.

**Einführung in die Kolloidchemie.** Third edition. BY PROF. VIKTOR POSCHL. Dresden: Steinkopff. 80 pp. Price, 2 Marks.

This is a simple treatment of colloids and contains the most condensed information, in systematic arrangement, of any of the briefer works on the subject. It includes a good list of references and title and author indexes.

W. R. WHITNEY.

**Die Bedeutung der Kolloidé fuer die Technik.** BY KURT ARNDT. Dresden: Steinkopff. 46 pp. Price, 1½ Marks.

This is a second edition of the pamphlet of two years ago. It is a very valuable adjunct to Poschl's book (previous review), as it deals with applications of principles there described. For example, the colloidal state is considered in connection with glass, minerals, ceramics, cements, dyes, soaps, tanning, brewing, etc. Absorption, electro-osmosis and other colloid phenomena are also discussed from a technical standpoint.

W. R. WHITNEY.

---

### RECENT PUBLICATIONS.

BAUER, H.: *Nahrungsmittelchemisches Praktikum.* Stuttgart: 8°, 266 pp., 7 M.

BENNET, H. G.: *The Manufacture of Leather.* New York: Van Nostrand. 441 pp., \$4.50.