

orientation, and through the foot-notes and literature references will serve as a guide for fuller study.

In Part II we find first a short general chapter discussing the relations of force and energy in the animal body and then a chapter on methods of investigating the liberation and transfer of energy. Although necessarily much condensed, this chapter gives a good idea of the construction and use of combustion and respiration calorimeters with discussion of methods of calculation of results. The modern devices of Atwater and others are described fully enough for the needs of the physiologist or general student. Following this chapter on methods there is a short one on the conservation of energy in the animal body and finally four longer chapters on these topics: "The Food as a Source of Energy—Metabolizable Energy"; "Internal Work"; "Net Available Energy—Maintenance"; "The Utilization of Energy". These are well-written and valuable chapters, and while the contents is largely compilation (it could not be otherwise when the magnitude and nature of the topic are considered) the presentation is such as to show the author's full acquaintance with the field and command of the subject. While most of the illustrations in this part of the work are drawn from experiments upon animals, it is clear that the results reached obtain just as certainly for man. The book may therefore be recommended to the attention of those working outside the domain of agricultural chemistry; it must be recognized as a valuable contribution to the literature of physiological chemistry.

J. H. LONG.

**TECHNICAL MYCOLOGY: THE UTILIZATION OF MICRO-ORGANISMS IN THE ARTS AND MANUFACTURES.** BY DR. FRANZ LAFAR. Translated from the German by CHARLES T. C. SALTER. Vol. II, Part I. Eumycetic Fermentation. London: Charles Griffin and Co. Philadelphia: J. B. Lippincott and Co. 1903. 189 pp. Price, \$2.50.

The first volume of this well-known work appeared in 1898 and was concerned with a discussion of schizomycetic fermentation, or the fermentations and similar changes produced by fission fungi or bacteria. In the present book, we have the first part of volume second which treats of eumycetic fermentation, or fermentation by the higher fungi, using the term fermentation in the older sense. The book is divided into three sections (Sections X, XI and XII of the whole work). The first treats of the general morphology and biology of the eumycetes; the second of fermentations by species

of the *mucor* family, while the third deals with fermentations by yeast proper.

This last section contains three interesting chapters and is evidently but the introduction to a full discussion of alcoholic fermentation in general, to appear in a later portion of the work. The scope of these chapters is suggested by their titles: Morphology and Life History of Yeasts; The Anatomy of the Yeast Cell; Chemistry of the Yeast Cell. The completed second volume will doubtless prove as useful to chemists interested in fermentation industries as was the first. The mechanical work on the book is excellent.

J. H. LONG.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY. Vol. I. GENERAL MEDICINE. Philadelphia: W. B. Saunders and Co. 1903. 691 pp. Cloth, \$3.00 net. Half-morocco, \$3.75 net.

This is a valuable annual publication which has already been noticed in this Journal in a review of the volume issued in 1902. The work has not as wide a scope as the *Jahresbericht für Chemie* and the reviews it furnishes are often critical to some degree. But it furnishes an excellent survey of all that is really important in medical literature from the whole world and in readable form. The rapidly increasing importance of chemistry and chemical physiology in general medicine is shown especially in this last volume, which can be recommended to all who are interested in the scientific side of medical progress. The work is issued in two volumes under the editorial control of Dr. George M. Gould. Volume I is always devoted to medicine and Volume II to surgery.

J. H. LONG.

RÉFLEXIONS SUR LA PUISSANCE MOTRICE DU FEU, ET SUR LES MACHINES PROPRES A DÉVELOPPER CETTE PUISSANCE. BY SADI CARNOT. (Réimpression fac-similé conforme à l'édition originale de 1824.) Paris: A. Hermann. 118 pp. 1903.

This reproduction, evidently photographic, of the classic which founded the science of thermodynamics, is a welcome addition to available scientific literature. The original is rarely to be found; and no ordinary reprint, however finely executed, can quite fill its place. One wonders that the photographic method is not more often used for this purpose, for letterpress which has been proof-read by the author has a virtue which no recomposition can attain.<sup>1</sup> The value of this edition is enhanced by an

<sup>1</sup> Ostwald testifies that the present fac-simile is precise, having compared it with his original copy. (*Ztschr. phys. Chem.*, 43, 640, May, 1903.)