ture of law and discusses patents without due regard to the patent laws of various countries. He often treats a patent too seriously.

A chapter is devoted to the carbides of the alkaline earth metals, but no mention is made of carbide of silicon, carborundum.

The author considers it impracticable to extract the common metals directly from their ores, by the current. They must first be smelted by ordinary means to crude metal to be refined by the current or else they must be leached and the solutions electrolyzed, with regeneration of the solutions for reuse, or utilizing the anode reactions for producing useful products.

While promising processes are being developed the commercial condition of the art is briefly this: No metal, with the possible exception of sodium in alloys and magnesium, is produced directly from native ores by the current. Only two important metals, sodium and aluminum, are produced by electric smelting proper. Silver, and incidentally gold, and vast quantities of crude copper are electrolytically refined. A few processes are applicable under special conditions.

Although this book is essentially German in its conception and execution, it must prove of great value to workers in the field. It is profusely illustrated, has a full table of contents and a good index. FREDERIC P. DEWEY.

THE BOOK OF THE DAIRY. TRANSLATED BY C. M. AIKMAN AND R. P. WRIGHT from the German work of W. FLEISCHMANN. London and New York: D. Van Nostrand Co. xxiv + 344 pp. Price $4.00.

This work is a translation of the first edition of Dr. Fleischmann's "Lehrbuch der Milchwirtschaft." Since the translators have completed their work, a second and improved German edition has been published. The translated edition does not include the important dairy work of the last six or seven years. This seriously impairs the usefulness of the book; as an example, the probabilities regarding the variations in the size of the fat globule are considered, while no reference is made to the recent work relating to this topic. Some of the old methods for testing milk as Marchand's butyrometer should have been replaced by more reliable and modern ones as Babcock's or Gerber's centrifugal method; then there would have been no necessity to have said, "It is to be hoped that a reliable method of deter-

mining fat will soon be discovered, so convenient and at the same time so cheap that it may be capable of being employed on small farms."

The strongest features of the work are: The part relating to the testing of the efficiency of separators; and the chapter on cheese-making. The figures for the creaming efficiency of separators are old and misleading, on account of the great improvements which have been made in their manufacture. The methods which are employed for testing their efficiency are however scientific. It is refreshing to read that when separator skimmed milk contains much less than one-tenth per cent. fat, the results are to be viewed with suspicion. The part relating to the importance of cleanliness in all dairy operations is also well treated.

The book has, however, been weakened by translation. The translators have aimed to produce a so-called popular book, and they have continually misused scientific terms. A calorie, page 117, is the amount of heat required to raise either *one pound* or *one kilo* of water 1°. On page 85, under the head, "Determination of Milk-sugar," the directions read "After it has been boiled for six minutes it is filtered through asbestos, and the reduction of the copper takes place spontaneously in the asbestos tube." On page 204, acidity is imparted to milk by either hydrochloric acid or soda. Fat, after saponification, is called butter. On page 284 condensed milk is called thickened milk. On page 224, a cut is given of a cheese mold, and it is called a cheese vat. On page 219, a curd knife is called a cheese vat. On page 81, an evaporating dish is called a thin porcelain basin.

The book should have been decreased in size, by omitting the obsolete parts and by a vigorous pruning of the cumbersome parts relating to the treatment of trivial matters.

HARRY SNYDER.

WATER AND PUBLIC HEALTH. BY JAMES H. FUERTES. New York: John Wiley & Sons. 75 pp. Price $1.50.

Mr. Fuertes has brought together much valuable information, and his method of stating a large part of it in graphic form, renders it decidedly more serviceable. Long columns of figures cannot be digested without considerable mental effort. but a