

per cent. is crushed. The balance is retained on the farms for foodstuffs, seed and fertilizer. Assuming that one ton of seed yields on the average 40 gallons of oil, we have an annual production of 120,000,000 gallons.

For the year ending September 1, 1905, there were exported from all parts of the United States 957,984 barrels of cotton seed oil, or about 51,600,000 gallons. The balance was consumed in this country, mainly for edible purposes.

THE SOUTHERN COTTON OIL CO.,
NEW ORLEANS, LA.

NEW BOOKS.

REPORT OF THE ROYAL HIGH SCHOOL OF AGRICULTURE AT PORTICI.

This work comprises the second series of the reports of this school, and includes Volume I, covering the year 1899, Volume II, for 1901, and Volume III, for 1902. Volume I, for 1899, contains a list of all the scientific papers which have been published by professors in the school. It does not contain any monographs of a strictly chemical nature. The most interesting report in the volume, for chemists, is written by Professor Eugenio Casoria, on Enology (pages 249-265). This paper contains the methods of analysis of wines as practiced in the Agricultural High Schools of Italy.

An interesting kind of wine is produced in Torre del Greco, near Naples, called *Lambiccato*. This is a kind of sweet wine, which is made by filtering the half-fermented must in order to remove the fermenting germs, and thus arresting fermentation. This half-fermented wine is used in the north of Italy for adding to the local musts for producing very delicate and highly esteemed beverages. The composition, shown by analysis, of this species of wine, gives the alcohol content as ranging from 3.42 to 9.45 per cent.

The second volume, covering the period of 1901, contains a number of articles of interest to chemists, the most important of which deals with the waters of the Vesuvian region, giving their incrusting properties and the method of purifying. A number of analyses of Vesuvian waters is given, and methods for diminishing their incrustations on boilers are discussed.

From the data of the analyses, and from the considerations set forth, it is concluded:

- (1) That the encrusting power of water is decreased, or nearly

eliminated, by the alkaline carbonates, which give rise to a powdery and non-cohesive deposit, which does not become attached to the walls of boilers, does no damage, and does not cause explosions. This fact has been found to be true with alkaline waters whose saline residue exceeds 4 grams per liter.

(2) The absence of the alkaline carbonates, in waters whose saline residue is less than 1 gram per liter, results in the formation of hard and compact incrustations which adhere firmly to the sides of the boiler with disastrous effect, causing explosions.

(3) The encrusting power is diminished in waters strongly contaminated by the process of nitrification.

(4) In the estimation of hardness of water, as a measure of its encrusting power, its temporary hardness has a fixed value, due to carbonates of calcium and magnesium, and which, expressed as the carbonate of calcium, may easily be determined in the water by means of normal or tenth-normal sulphuric acid.

(5) The use of calcium hydroxide, at a low temperature, has the effect of precipitating the calcium carbonate, while the magnesium carbonate remains in solution.

(6) The total elimination of the encrusting constituents is accomplished in the same way, at a low temperature, by means of the addition of commercial sodium hydroxide.

The results brought about by this last method are rapid, and the expense is extremely slight.

The third volume, covering the period of 1902, is devoted exclusively to the study of the difficulties which surround agricultural conditions in Italy, and does not contain anything of particular interest to the chemist, although it contains many matters of great importance to the economist and statistician.

H. W. WILEY.

THE CONDUCTIVITY OF LIQUIDS. METHODS, RESULTS, CHEMICAL APPLICATIONS AND THEORETICAL CONSIDERATIONS. By OLIN FREEMAN TOWER, PH.D., Assistant Professor of Chemistry, Western Reserve University. Easton, Pa.: Chemical Publishing Co. 1905. 182 pp. Price, \$1.50.

This book offers a systematic survey of our present knowledge of electrolytic conductivity. The first few chapters describe in detail the standard methods of experimental procedure. In the later chapters the author attempts, as far as possible, to avoid paralleling Kohlrausch and Holborn's "Leitvermögen der Elektro-