

place. This continues until extraction is complete.)

"4. There is a continuous and rapid flow of solvent. The rate of flow is, of course, dependent on the rate of distillation.

"5. If the apparatus be left to 'stand overnight,' the substance remains totally immersed, and when the extractor is started again the first few ml. of solvent from the condenser cause circulation to continue.

"6. As soon as the solvent is circulating easily, only a few ml. are necessary in the flask to continue the extraction.

"7. The contents of the extractor are visible.

"The extractor may be used for the extraction of substances which require no filtering medium, and

cakes, etc., in which some form of filter is necessary.

"Using asbestos as a filtering medium, cocoa has been successfully extracted without any of the fine powder passing through into the flask.

"On the same principle (1) and (2) are glass thimbles which are placed in the container shown. The thimble may rest on cotton-wool, which supplies a further filtering medium, or may rest directly on the glass, when the hot vapor will pass up and around the thimble.

"Except for special purposes, when these thimbles might be required, the complete extractor (X), as shown in the accompanying diagram is simpler and more satisfactory in use."

Book Reviews

THE INDUSTRIAL CHEMISTRY OF THE FATS AND WAXES. By T. P. HILDITCH, D. Sc., F. I. C., Professor of Industrial Chemistry (Oils, Fats, and Waxes) in the University of Liverpool, with an introduction by E. Frankland Armstrong D. Sc., LL. D., F. R. S., 8vo., XV—461 pp. D. Van Nostrand & Co., New York.

This admirable work offers what appears to be the most logical concise discussion of the chemistry of oils, fats and waxes from the viewpoint of advanced chemical knowledge, which has come to our notice.

The word "oil" is omitted from the title with purpose, as the author suggests the logical substitution of the term "liquid fat" for "fatty oil" to avoid confusion with oils of petrolic origin. An excellent suggestion, but one which is almost impossible of practical attainment, since its general adoption would

involve a radical change in the speech-habits of all persons connected with a vast, world-wide industry. For purely chemical use, however, it would promote clarity.

The author divides his work into ten sections, progressing from the chemical nature of fats and the composition of natural fats through the technology of fat production and utilization. The outstanding chapters are those on the composition and properties of fatty acids, on the distribution of fats and waxes in nature and on the physical chemistry of soap. As would be expected in a work from the pen of so eminent an educator (and in consonance with the purpose of the book, as expressed in the preface), the purely chemical chapters, including those on analysis, as well as those on composition and theory, surpass the technologic sections in

detail of material, but the latter are characterized by a summation of preferred practices and by a lack of misinformation which are most refreshing when contrasted with some previous efforts to cover the same ground in English.

The classification of the bibliography in sections is of extreme value.

Summarizing, here is a work on the chemistry of fats and waxes

which is modern in every sense of the word, and which is free from glaring errors of fact or of typography.

It will provide an ideal textbook for advanced students, and it is worthy of a prominent place in the reference library of every chemist or chemical engineer who is engaged with or interested in fats, waxes, or soaps.

A. P. L.
