

plishment of the object was impossible by extraction with water, alcohol, or ether. Brandt very properly closes the account of his observations by stating that the experience further indicates the propriety of never placing implicit confidence in chemicals claimed to be chemically pure, but to test everything before using it.

In view of the recent extension of the use of the modified Ulsch method in the laboratories of this country, it seemed important that our own analysts should be put on their guard as to the possible character of the reduced iron sold as chemically pure.

B. L. HARTWELL AND H. J. WHEELER.

*On the Determination of Sulphur in Sulphites.*—This method is founded on the following well-known reaction: Sulphur dioxide, when brought into contact with nascent oxygen and water, is transformed into sulphuric acid. The operation is conducted as follows: The weighed sulphite dissolved in water is placed in a beaker, and a mixture of water, hydrochloric acid, hydrogen peroxide, and barium chloride is added in sufficient quantity. The beaker is covered with a watch-glass, gently heated, and the operation conducted as in the case of a determination of sulphuric acid.

$$\text{Weight of BaSO}_4 \times 0.1371 = \text{S.}$$

$$\text{Weight of BaSO}_4 \times 0.2742 = \text{SO}_2.$$

The reaction comprises three phases:

(1) The sulphite is decomposed by hydrochloric acid, which liberates sulphurous acid.

(2) Sulphurous acid decomposes hydrogen peroxide and unites with the nascent oxygen forming sulphuric acid.

(3) Sulphuric acid with barium chloride gives barium sulphate.

Potassium metasulphite,  $\text{K}_2\text{S}_2\text{O}_5$ , analyzed by this method has given:

	Calculated. Per cent.	Found. Per cent.
Sulphur .....	28.8	28.8560
Potassium .....	35.1	34.9755
Oxygen .....	36.1	.....

In using the bromine method the result for sulphur was 29.0202 per cent.

Commercial hydrogen peroxide cannot be employed, as it generally contains sulphuric acid. A proper reagent for this purpose is obtained by adding hydrated barium dioxide to water acidulated with hydrochloric acid.<sup>1</sup> The barium dioxide is added in small quantities until the liquid is alkaline, when alumina and ferric oxide are separated. The turbid alkaline liquid is thrown on a pleated filter and the filtrate collected in a vessel containing some hydrochloric acid. This filtrate is then ready for use.

A. BOURGOUGNON.

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*Fuller's Earth.*—A recent discovery of a large deposit of fuller's earth in Florida promises to be of considerable importance to the oil trade. Up to the present all the fuller's earth used by the cotton oil, and lard manufacturers has had to be imported from England and has sold for as much as \$15 to \$20 per ton in New York. The domestic product has so far proved unsuitable for this particular purpose and has sold for only \$7 per ton, and is used only in the mineral oil industry. The product from this newly discovered deposit has been thoroughly tested by experts in the cotton oil industry and is pronounced to be fully equal to the best grades of the imported material. So soon as capital can be interested in the property the consumers will be able to obtain a high-grade fuller's earth of domestic origin which will cost them very much less than they at present have to pay. The terms on which the property is offered are so favorable that the new material will no doubt soon be put on the market.

F. T. SCHREIBER.

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### NEW BOOKS.

THE OUTLINES OF INDUSTRIAL CHEMISTRY. By FRANK HALL THORP, PH.D. New York: The Macmillan Co. 1898. xx + 541 pp. Price, \$3.50.

While no book can fully cover a field so rich in carefully guarded secrets as those pertaining to technical chemistry, I know of no treatise on that subject which gives the student a clearer and more comprehensive view thereof than Thorp's "Outlines of Industrial Chemistry."

The student who has mastered its contents can visit a factory

<sup>1</sup> This Journal, 12, No 3 (1890).