fully ignited to constant weight.

8. The weight of the ash, divided by the weight of the sample, and multiplied by 100 shall be the percentage "extracted" ash in the sample, or

$$\text{Percent ``extracted'' ash} = \frac{\text{Weight ash}}{\text{Weight Sample}} \times 100$$

In the Presence of Ammonia:

Five to eight grams of the sample shall be dissolved in 80 ml. of water in a 300-ml. beaker. Ten ml. of N/1 NaOH shall be added and the solution boiled gently until wet litmus paper no longer indicates ammonia. The solution shall now be cooled and transferred into a 300-ml. pear-shaped separatory funnel and about 35 grams of solid sodium chloride added, or enough to make finally a 25% salt solution. Five drops of methyl orange shall be added and the neutralization, extraction, etc., conducted as under the test "In the Absence of Ammonia."

Calculation

Organically Combined Sulfuric Anhydride:

10. The percent "extracted" ash multiplied by $2SO_3/Na_2SO_4$ shall be the percentage of organically combined sulfuric anhydride in the sample, or

Per cent combined sulfuric anhydride = 1.1267 times per cent "extracted" ash

and shall be reported as: "....% organically combined SO_3 by weight, Ash-Gravimetric Method."

Accuracy

Accuracy:

11. The accuracy with this method is limited to the losses due to manipulation. Practice has shown that the accuracy to be expected is that duplicate determinations of the ash should not differ from each other more than 5 mgms.

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CORRECTION

In Oil & Soap, December, 1935, there was an error in the published formula for calculating Thiocyanogen Number, page 287, column 2, line 24, as follows:

(Blank — Titration) × $Na_2S_2O_3$ factor (I.V.) × 0.2 = Thiocyanogen Value (T.V.).

According to the original article of Martin and Stillman, Oil & Soap, 10, p. 30 (1933), this formula should read:

$$\text{T.V.} = \frac{(\text{Blank Titration}) \times (\text{Normality of } Na_2S_2O_3) \times (12.69)}{\text{Weight of Sample}}$$

or the calculation may be expressed as follows:

$$\text{T.V.} = \frac{(\text{Blank — Titration}) \times Na_2S_2O_3 \text{ factor (I.V.) } (\times 100)}{\text{Weight of Sample}}$$

when the $Na_2S_2O_3$ factor (I.V.) is expressed as grams of I_2/c.c.

THE PROCTER & GAMBLE OIL COLORIMETER

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A GREAT many attempts have been made in the last few years to apply photo-electric devices, spectrophotometers, color analyzers, and similar instruments to the determination of the color of fats and oils. Some of them have been quite successful. Yet in spite of these, the simplest, cheapest and most practical method for evaluating oil colors is the Lovibond system of color glasses, which, with modifications, has been adopted as standard by the American Oil Chemist Society.

The system is not without its faults. One of the chief drawbacks has been the large number of standard glasses required, and the difficulties and errors introduced in handling them. This has led to the development of several instruments in which the glasses are manipulated mechanically. The earliest of these was the colorimeter developed by H. S. Bailey in 1924. More recent instruments have been those introduced by the Precision Scientific Company, The Emil Greiner Company, and The Tintometer Limited, of England, the originators of the Lovibond system. None of these have exactly met the requirements of the Oil Chemists.

The Procter & Gamble oil colorimeter was first developed in 1927. The original instrument built at that time is still in daily use in one of the Ivorydale control laboratories. Recently the instrument was redesigned to meet the specifications embodied in the "Report of the Color Committee for 1933-1934." At the same time a number of mechanical improvements were made.

The colorimeter is essentially a modification of the original Bailey instrument. It consists of two main parts, the light box, and the color glass magazine.

The light box meets the specifications set forth in the "Report on Tintometer Standardization," in the August, 1931, issue of the *Journal of Oil and Fat Industries*, and modified in the "Report of the 1933-34 Color Committee." In this instrument the box is made of cast aluminum. One side is formed by a sliding panel which completely ex-