duplicating *Experiment B*, which was the most promising of the first four. Two hundred and fifty grams BaO were ground to pass a 16-mesh sieve and were added to 1 liter of the same lot of alcohol used in all the foregoing work. A mechanical agitator with mercury seal and side-neck for reflux (and subsequently for distillation condenser) was used and agitation was continued not only for the two hours of refluxing, but during distillation until the residue became pasty. The last 26 cc. of distillate was taken, using vacuum, after the removal of the agitator.

TABLE IV.

| | Yield, cc. | Sp. gr. at 20° C. | Per cent alcohol. |
|---|---|---|---|
| First fraction | 918 | 0.79616 | 97.75 |
| Second fraction | 26 | Sp. gr. not determined .... | |

This means that out of a possible 747 Gm. $C_2H_5OH$ were obtained 734.6 Gm., a yield of 98.6%. Also, the same calculations used on the other four experiments shows the BaO to have combined with 48.6 Gm. of water, or that 73.6% of the $Ba(OH)_2$ was hydrated to $Ba(OH)_2.H_2O$.

## CONCLUSIONS.

An "absolute" alcohol of 97.5% or over may be obtained by using 250 Gm. of commercial BaO per liter of alcohol as low as 91.9% ethyl alcohol (by weight).

A yield of 94% by volume, which is an actual yield of 98% of the $C_2H_5OH$ originally present, may be obtained.

Using less than 250 Gm. BaO per liter gives a product assaying less than 97.5%, while more than 250 Gm. reduces the yield.

Vacuum distillation increases the efficiency of the BaO but greatly decreases the yield. It should, however, be applied to the residue after the regular distillation (and after cooling somewhat), since the yield may be increased 3–4% thereby.

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# OLIVE OIL—FLUORESCENCE IN ULTRAVIOLET LIGHT.*

BY J. LEWIS DEUBLE AND R. E. SCHOETZOW.

A number of writers[1] have discussed the fluorescence of various types of olive oil when viewed under the ultraviolet light. Some months ago we had an opportunity to examine some samples of olive oil which we believe to be authentic. Our results corroborating those already published may be of interest. The samples examined were:

I. Pure Virgin Italian Olive Oil.
II. Pure Virgin Spanish Olive Oil.
III. Pure Virgin Tunisian Olive Oil.
(All three oils are of first pressing and are unfiltered.)

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* Scientific Section, A. PH. A., Rapid City meeting, 1929.

[1] See Bibliography at end of article.

IV. Pure virgin Tunisian Olive Oil of second pressing, unfiltered.
V. Pure refined Olive Oil, filtered.
VI. Refined Olive Oil extracted with carbon disulphide.

These oils were certified by the Laboratorio Chimico of the Instituto Sperimentale per l'Olivicoltura e l'Oleificio of Imperia, Italy. These oils were examined under a 110-volt Cooper Hewitt Uviarc with a Corning G. 586 A. W. Filter. The three virgin oils of the first pressing exhibited a lemon-yellow fluorescence under the ultraviolet light, while the olive oil of the second pressing had a brownish fluorescence. The refined olive oils both had a bluish fluorescence.

We then made various mixtures of the refined olive oils with the virgin olive oils in order to see how small a quantity of refined oil could be detected. The fluorescent colors of the mixtures were between the fluorescent colors of the separate oils. The blue fluorescence of the refined oils was more persistent and easily seen when mixed with increasing amounts of the brown fluorescent virgin oil than with the lemon-yellow fluorescent virgin oils. With the virgin oils exhibiting a lemon-yellow fluoresence, we could not detect much less than 20% of refined oil. In the case of the virgin oil of the second pressing we could detect the presence of 10% of refined oil.

It appears then, that the ultraviolet light is of value in the examination of olive oil. An opinion as to the nature of the oil whether it is virgin, refined or a blend of the two can be obtained from the fluorescence.

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## THE TWENTY-FIFTH ANNIVERSARY OF THE FEDERAL FOOD AND DRUGS ACT.

Dr. James H. Beal in summarizing the work of the AMERICAN PHARMACEUTICAL ASSOCIATION in an address before its Diamond Anniversary meeting said in part:

"The AMERICAN PHARMACEUTICAL ASSOCIATION not only substantially re-created and insured the continuation of the United States Pharmacopœia as an independent publication, and almost wholly created the National Formulary, but when the Federal Food and Drugs Act was enacted in 1906, it succeeded in securing the adoption of these two volumes as the standards of that Act, an example which has been followed in turn in all State food and drug enactments.

"In thus securing the adoption of the Pharmacopœia and National Formulary as legal standards, the ASSOCIATION rendered one of the greatest possible services to the whole of pharmacy, and saved it from the menace of constantly changing standards of bureaucratic creation....."

## AMERICAN CHEMICAL SOCIETY.

Eighty-second meeting of the American Chemical Society will be held at Buffalo, August 30th to September 4th. All papers for general, divisional and regional meetings, or meetings of local sections, are the property of the American Chemical Society unless released by the Society's editors. Abstracts of papers should accompany all titles when sent to the secretaries of the various divisions.