would stop a hemorrhage. The rank and file of physicians would, however, prefer to stop a hemorrhage by other means.

If any one cares to take the responsibility of making clinical tests with such a product let him who doubts the significance of blood pressure tests take the initiative.

PHARMACOLOGIC LABORATORY, SMITH, KLINE & FRENCH COMPANY.

DETERMINATION OF ALCOHOL IN TINCTURE OF IODINE.

J. W. MARDEN.

It is essential in the assay of tincture of iodine, to determine the percentage of alcohol used in preparing the tincture, as well as to determine the iodine and potassium iodide. The ordinary method of determining alcohol by making alkaline with potassium hydroxide and distilling cannot be used on this preparation because the ethyl iodide always existing in the tincture distills at even a lower temperature than alcohol and in experiments run for this purpose considerable amounts of the iodide were found in the alcoholic distillate. There have been various modifications of the distillation method suggested (1, 2, 3), but none of them combine the desired accuracy with the small amount of time necessary for a determination. The method proposed by Thurston and Thurston consists in the decolorizing of the iodine with sodium thiosulphate, making alkaline with sodium hydroxide, distilling and determining the alcohol in the ordinary way. The results by this method are "practically the percentage of absolute alcohol in the mixture." Experience has shown that with this method only approximate results can be attained, and often even after redistillation the alcoholic solution smells strongly of hydrogen sulphide and sulphur dioxide. It might be suggested, however, that arsenous oxide would be better than sodium thiosulphate for decolorizing the iodine.

A shorter method in which the percentage strength of the alcohol used in preparing the tincture can be calculated from the specific gravity of the tincture, based upon experimentally determined factors, is proposed in this paper. It was found in the laboratory that a correction factor could be obtained for varying amounts of either potassium iodide or iodine when dissolved in alcohol, so that the weight of a given volume of alcohol could be calculated by subtracting the increase in weight due to either. This factor for any given volume consists in the weight change due to one gram of the added substance dissolved in 100 cc. of alcohol. It is very obvious that each substance must have its own factor. If the factor be multiplied by the number of grams of iodide per 100 cc. as the case may be, the weight of alcohol used in the preparation is found by substracting both from the weight of the given volume of the tincture.

(1) Inversion of I with Hg as suggested by Alcock.—Proc. A. Ph. A., 1904, 583.
(2) Inversion of I with Fe as suggested by Roscoe & Schorlemer.—Treatise on Chemistry, Vol 1.
(3) Inversion of I with $Na_2S_2O_8$ suggested by Thurston & Thurston.—Proc. A. Ph. A., 1912, 1155.

For the following experiments, a specific gravity apparatus made from a 5 cc. pipette as described by Mulliken[4] was used. This pipette at 20° C. holds 4.7050 grams of distilled water. For this apparatus the factor for the increase of weight due to one gram of postassium iodide dissolved in 100 cc. of alcohol is equal to .0365. The increase of weight due to one gram of iodine dissolved in 100 cc. of alcohol is .0333.

Mixtures of water and alcohol were prepared and the percentage of alcohol determined by the specific gravity. Tinctures were then made up with these, using known weights of iodine and potassium iodide, the specific gravity of each tincture determined, and from this the specific gravity of the alcohol used in the preparation calculated as is shown in the example given below.

Sample calculation:

Specific gravity of the alcohol used for tincture preparation 0.8130 equals 95.82 percent by volume at 20° C. (Determined before tincture was made.)

Weight tincture (in pipette) 4.1246 at 20° C.

Weight water " 4.7050 at 20° C.

Grams KI per 100 cc. equals 3.550 which multiplied by .0365 equals .1295, equals the weight change due to KI per 100 cc.

Grams I per 100 cc. equals 5.060 which multiplied by .0333 equals .1685, equals the weight change due to I per 100 cc.

4.1246		
.1295	3.8266	equals specific gravity alcohol, equals 0.8133, equals 95.74 percent by volume.
3.9951	4.7050	
.1685		
3.8266		

The results given in the following table have all been calculated in the same way.

TABLE.

No.	Wt. Tincture	gm. KI per 100 cc.	gm. I per 100 cc.	Pct. of Alc. by calc.	Pct. of Alc. used in prep.	Dif.
1	4.1246	3.550	5.060	95.74	95.82	—0.08%
2	4.1532	2.504	7.100	95.71	95.82	—0.11%
3	4.1052	1.250	6.920	95.61	95.82	—0.21%
4	4.0467	0.000	6.748	95.97	95.82	+0.15%
5	4.1967	4.000	5.918	94.26	94.03	+0.23%
6	4.2762	4.454	6.770	92.24	92.24	0.00%
7	4.4799	4.690	7.030	79.12	78.93	+0.19%
8	4.3937	4.430	6.376	83.46	83.64	—0.18%
9	4.5927	4.770	6.886	69.79	70.08	—0.29%
10	4.5062	3.475	5.155	68.25	68.56	—0.31%
11	4.6827	4.842	6.748	61.40	61.23	+0.17%
12	4.5851	2.521	3.940	53.67	53.48	+0.19%

It will be seen from the above data that these results check to 0.3 percent with this sort of an apparatus. This is but little more than the limits of error of the apparatus, for although an error of reading the pipette of 0.5 mm. would make an error of but 0.05 percent (diameter of the tube 2.5 mm.) it is very hard with a pipette to always get the last drop wiped off exactly the same, and a difference of but 4.0° C. in temperature would make 0.1 percent error on the weight of water.

(4) Identification of Pure Organic Compounds, Vol. 1, page 229.

According to Briggs[5] it is possible to determine alcohol (by distillation) to 0.2—0.3 percent with great care, but "still in the regular assay of a great many samples much larger errors will creep in and results may be off as much as 1.0 percent to 1.5 percent alcohol." If this be true the above results done without great precautions check very favorably with the finest results attainable by the other methods.

The factors can be restated so as to be of use in any specific gravity weight apparatus as follows: The increase in weight in any apparatus due to 1 gm. of KI in 100 cc. of alcohol is .00775 multiplied by the weight of water necessary to fill the same at 20° C. Likewise, the increase in weight in any apparatus due to 1 gm. of I in 100 cc. of alcohol is .00707 multiplied by the weight of water necessary to fill same at 20° C.

If the percent of alcohol actually existing in the tincture is desired instead of the percentage strength of the alcohol used in making the preparation, the result obtained above should be divided by 1.022.

CONTRIBUTED FROM THE SOUTH DAKOTA STATE FOOD AND DRUG LABORATORY, September 12, 1913, Vermilion, South Dakota.

LONG FELT WANTS.

The man who sets out to make his fortune filling long-felt wants usually ends in the attic bedroom at the county poor farm. There aren't any long-felt wants. There are scarcely any felt wants of any kind. Usually before a want pips the shell there are nine advance agents waiting for it with sample pulmotors, health foods, soothing sirups, fancy soaps, and a pair of ready-made wings.

Can you imagine a dress-goods manufacturer waiting until the women of America rise up and cry for Alice-blue cloth, or a yellow pattern with pink rosebuds in it? Do you fancy a chewing-gum manufacturer waits until the public has longed and sighed a few years for a certain flavor?

Today success means supplying the wants of tomorrow. It is not the long-felt wants it pays to look after, but the unborn ones. It is the man who has imagination and common human instincts who can look ahead and see what the world will want to-morrow and the next day that wins.

And, after all, when you notice it, that is the secret of sucess in politics, in business, in everything—to have the understanding of men which comes of sympathy, or of fellow feeling, which makes one feel their real needs; and with it that constructive imagination that will anticipate the wants that are to come.—*Popular Magazine.*

[5] Jr. Ind. and Eng. Chem., Jan., 1913.