

in parallel with Chace and the Hiltner methods and with diaminophenol hydrochloride:

		TABLE No. 1.		
		Chace Method.	Diaminophenol Method.	
No.	1	Ext. Lemon.....	.196	.196% citral
"	2	" .....	.187	.200
"	3	" .....	.176	.176
"	4	" .....	.187	.176
"	5	" .....	.166	.166
"	6	" .....	.181	.181
"	7	" .....	.227	.232
"	8	Concentrated		
"	9	Ext. Lemon.....	.830	.835
"	10	" .....	.785	.830
"	11	" .....	.880	.880
"	12	" .....	.704	.748
"	13	" .....	.875	.875
"	13	" .....	.790	.770

		TABLE No. 2.		
		Hiltner Method.	Diaminophenol Method.	
No.	1	Ext. Lemon.....	.176	.182% citral
"	2	" .....	.1304	.1428
"	3	" .....	.1668	.1714
"	4	" .....	.1578	.1578
"	5	" .....	.1394	.143
"	6	" .....	.105	.111

		TABLE No. 3.		
		Hiltner Method.	Diaminophenol Method.	
No.	1	Oil Lemon.....	4.20%	4.28%
"	2	"	4.00	4.14
"	3	"	4.28	4.28
"	4	"	3.16	3.14
"	5	"	4.61	4.68

While extreme accuracy is not claimed for the above method it is submitted with the hope that it may be of assistance to the pharmacist or chemist in making a comparative estimate of value or citral content of Extract of Lemon or Oil of Lemon for which it is given.

THE DETECTION OF ADDED METHYL SALICYLATE.*

WITH SPECIAL REFERENCE TO A NEW COLOR TEST AND THE CLAIM OF UNITED STATES GOVERNMENT CHEMISTS TO HAVE DEvised A METHOD.

The article which appeared in the Record of January, 1914, page 4, on the above subject has brought us so many inquiries and communications that we think it well to make further reference to the matter, especially as considerable interests are involved.

It will be recollected that it was claimed that the "specialists" of the Bureau of Chemistry are able to detect the addition of synthetically manufactured methyl salicylate in the natural product. We pointed out the importance of this, especially in view of the difficulties which previous workers had experienced in the task.

*Reprinted from Perfumery and Essential Oil Record, Feb., 1914, p. 60.

We are informed that all applications to the United States Department of Agriculture for particulars of the test have been met with the statement that the test used is under further investigation, and will be communicated by the Department in due course. We presume that there is some reticence, as the test has been used in connection with legal proceedings under the Food and Drugs Act.

We have been experimenting continuously since our last publication, and suggest that a test which may be eventually found to be useful is a color test, which so far as our observations have gone appears to be of some reliability. We have employed the test upon what we have every reason to believe to be true oil of *Gaultheria procumbens*, true oil of *Betula lenta*, oils, about which we have certain suspicions, and upon methyl salicylate. As, however, is usual with all color tests, they must be accepted with reserve, and it is absolutely essential that identical conditions should obtain in every test.

The application of the test as we have made it has been on the following lines:

"To five drops of the oil in a test tube add five drops of a 5 percent alcoholic solution of vanillin and 1 cc. of alcohol. Shake well and add 2 cc. of concentrated sulphuric acid and mix thoroughly."

The following table indicates the results of our examination of typical samples, which we have described above:

Oil of <i>Gaultheria procumbens</i>	Intense crimson
Oil of <i>Betula lenta</i>	Deep blood red
Doubtful (a)	Reddish brown
Doubtful (b)	Reddish brown
Methyl salicylate (synthetic)	Yellow

By this intensity of coloration there can be no question that one can see a difference between oils that are pure and oils that are grossly adulterated, but whether it can be made into a colorimetric test is, of course, difficult to say. One remembers only too well how that the intensity of color produced by the action of sulphuric acid on cod liver oil, namely, the dark violet coloration, was used by a public analyst as an indication of the freedom or otherwise of the cod liver oil from certain other added fish oils.

We make no further comment until we are favored with full particulars of the "official" test, but, at the same time, one can see that it is important that a publication should be made as promptly as possible, especially if the test is to be thoroughly investigated before its inclusion in the new United States Pharmacopoeia.