The results under No. 3 also show the necessity of filtering oil cool; heating to facilitate filtering gives darker color readings.

Our conclusions and recommendations are as follows:

1. The present method for determining refining loss and color, as a means of evaluating crude cottonseed oil should not be condemned as fairly concordant results on duplicate samples can be obtained by different chemists, if variations in manipulation are avoided.

2. Work should be continued in the direction of further eliminating possible variations in manipulation.

3. Further tests should be made giving particular attention to crude oils that refine and settle with difficulty when subjected to the usual treatment.

4. As the present rules omit all reference to filtering the refined oil, a sentence should be inserted in rule No. 272—Section 7 (*a*) at the beginning of the section, reading as follows:

"If the refined oil is not clear and brilliant, it must be clarified before reading the color, by filtering through white filter paper at a temperature of 20° to 24°C., without the application of heat or addition of any material to facilitate filtration."

THE PROCTER & GAMBLE CO.,
IVORYDALE, OHIO

STANDARDIZATION OF COLOR READINGS, REPORT FOR 1924-25

BY H. P. TREVITHICK

The color committee this year has confined its efforts to a test of the Bailey tintometer. Six samples were sent out to the members and were read by the use of the Wesson instrument, the Bailey instrument, and with the old-fashioned Daylight machine. The results were averaged and the maximum and minimum deviations determined on each sample. Strange to say, the total deviation from the mean by natural daylight was less than by either the Wesson or the Bailey instrument. This, I believe, was due to the fact that the orifices in the natural instrument are much larger. A copy of these readings are attached herewith. In five out of six readings the mean of the Wesson is much less than the Bailey instrument.

The members were also asked to make comparative readings on samples of their own and report them. Mr. James has sent in a list of cottonseed oils only; the other three gentlemen have not sent theirs in yet. There is also attached a list of readings made on oils and greases, made by your chairman.

Some of the members of the committee are much in favor of the Bailey instrument while others are not. Two of the major criticisms are the size

of the orifices, and the intensity of the light. They still feel, however, that the instrument is satisfactory enough to be adopted as one of the instruments available for reading colors, and we therefore recommend that the Society consider such adoption.

The committee also feels that if the old style instrument were incased in a suitable box, with reflectors and artificial light source, it would be at least

COLOR READINGS OF COTTON OIL MADE BY MR. JAMES

Daylight	Wesson	Bailey	Daylight	Wesson	Bailey
7.9	7.6	7.5	6.0	5.6	5.6
5.8	5.6	5.6	5.0	4.8	4.8
6.4	6.2	6.1	4.8	4.6	4.5
5.4	5.1	5.0	9.0	8.6	8.4
8.6	8.2	8.1	4.2	4.0	4.0
7.6	7.3	7.2	7.0	6.7	6.6
4.8	4.5	4.5	12.8	12.6	12.4
6.8	6.6	6.5	3.8	3.6	3.6
8.6	8.2	8.1	9.6	9.3	9.2
7.2	6.9	6.7	6.6	6.4	6.4

COLOR READINGS MADE BY MR. H. P. TREVITHICK

	Wesson	Bailey	Natural Daylight
Sesame oil	13Y— 2.2R	13Y— 2.2R	12Y— 2.0R
Palm kernel oil	50Y—10.0R	44Y— 8.4R	50Y— 9.7R
Cottonseed oil	35Y— 9.6R	35Y— 9.3R	35Y— 9.8R
Cottonseed oil	35Y— 9.8R	35Y—10.1R	35Y—10.0R
Cottonseed oil	35Y—14.0R	35Y—13.2R	35Y—13.8R
Grease (1″ column)	35Y— 5.5R	50Y— 5.0R	
Grease bleached (1″ col.)	10Y— 2.2R	10Y— 2.2R	
Palm kernel oil	40Y— 6.8R	40Y— 6.5R	
Palm kernel oil	40Y— 6.6R	35Y— 6.3R	
Grease	70Y— 7.8R	70Y— 6.6R	
Grease	15Y— 2.5R	13Y— 2.4R	
Grease	35Y— 6.5R	35Y— 5.2R	
Grease	20Y— 3.5R	20Y— 3.6R	
Sesame oil	8Y— 1.5R	9Y— 1.3R	9Y— 1.5R
Sesame oil	7Y— 1.5R	7Y— 1.5R	7Y— 1.5R
Sesame oil	8Y— 1.2R	8Y— 1.2R	8Y— 1.3R
Sesame oil	9Y— 1.3R	9Y— 1.2R	9Y— 1.3R
Sesame oil	5.5Y—1.0R	6Y— 1.0R	5Y— 1.0R
Palm kernel oil	45Y— 9.2R	44Y— 8.2R	45Y— 9.0R
Palm kernel oil	40Y— 7.4R	40Y— 6.6R	40Y— 7.4R
Sesame oil	10Y— 1.5R	9Y— 1.5R	10Y— 1.5R
Cottonseed oil	13.5R	13.6R	14.7R
Cottonseed oil	13.2R	13.1R	13.7R
Cottonseed oil	10.3R	11.0R	11.1R
Cottonseed oil	10.7R	11.1R	11.5R
Cottonseed oil	10.8R	10.9R	11.5R
Sesame oil	7Y— 1.0R	7Y— 1.0R	6Y— 1.0R
Cottonseed oil	8.8R	9.0R	

as satisfactory as the present instruments. We believe that this was done by Curtis and Tompkins several years ago.

Mr. Bailey has a set of glasses which were to be standardized by the Bureau of Standards. If these glasses are available for the standardization of the sets of the members of the Society, we feel that there will be much closer agreement in the color readings.

	1	2	3	4	5	6
Wesson Instrument						
Putland	5.9	4.5	7.5	14.7	3.0	8.5
James	8.8	4.5	...	16.0	3.6—	9.6
Evans	9.2	4.5	6.8	16.3	3.3	9.2
Barrow	8.8	4.7	...	15.7	3.9	9.5
Trevithick	10.2	5.2	7.8	16.8	3.8	9.8
Mean	9.3	4.7	7.4	15.9	3.5	9.3
Max. deviation—plus	0.9	0.5	0.4	0.9	0.4	0.5
minus	.5	.2	.6	1.2	.5	.8
Total deviation	7.4					
Bailey Instrument						
Putland	6.3	4.7	7.9	15.6	3.5	9.3
James	9.4	4.6	...	16.0	3.6	9.4
Evans	11.0	6.0	8.0	....	5.0	11.0
Barrow	9.1	4.9	...	15.2	4.1	9.8
Trevithick	10.6	5.6	8.1	15.0	3.7	10.4
Mean	10.0	5.2	8.0	15.5	4.0	10.0
Max. deviation—plus	0.9	0.8	0.1	0.5	1.0	1.0
minus	1.0	.5	.1	.5	0.5	0.7
Total deviation	7.6					
Natural Daylight Instrument						
Putland	6.3	4.7	8.4	14.9	3.2	8.5
James	9.6	5.6	...	15.8	3.8	9.8
Evans	...	...	...	16.3	4.0	9.7
Barrow	10.5	5.3	...	16.0	4.1	9.8
Trevithick	10.5	5.8	7.6	17.0	3.9	10.2
Mean	10.2	5.3	8.0	16.0	3.8	9.6
Max. deviation—plus	0.3	0.5	0.4	1.0	0.3	0.6
minus	.6	.6	.4	1.1	.5	.9
Total deviation	7.0					

The Chairman wishes to thank the members of the committee, Messrs. A. W. Putland, E. M. James, J. D. Evans and E. R. Barrow, for their hearty coöperation during the year.

Bur. of Chemistry, N. Y. Produce Exchange,
New York City