(CHEMISTS' SECTION)

Dried on Steam Bath with CO ₂					Co-operative Soapstock "B."			
	(1)	(2)	(3)	(4)		Ethyl Alcohol dried in oven.	Ethyl Alcohol dried in CO ₂	No. 30 De- tured Alcohol.
Hours.	Ethyl Alcohol.	Ethyl Alcohol.	Ethyl Alcohol.	No. 30 Denatured Alcohol.	Hours.			
1.....	46.33%	.....	46.57%	.....	1/2.....	49.84%	.....	50.00%
2.....	45.59%	47.49%	45.37%	45.92%	1.....	49.79%	.....	49.86%
3.....	45.47%	45.54%	45.18%	45.68%	1 1/2.....	49.78%	.....	49.85%
4.....	45.44%	45.45%	45.15%	45.59%	2.....	.....	50.19%	.....
5.....	45.42%	45.43%	45.12%	45.57%	3.....	.....	49.78%	.....
6.....	45.40%	45.41%	45.11%	45.55%	4.....	.....	49.61%	.....
7.....	45.39%	45.40%	45.10%	45.55%	5.....	.....	49.62%	.....

Co-operative Black Grease No. 1.

Dried in Oven at 106° C.				
	(1)	(2)	(3)	No. 30
Hours.	Ethyl Alcohol.	Ethyl Alcohol.	Ethyl Alcohol.	Denatured Alcohol.
.....	94.64%	94.59%	94.83%	.....
1/2.....	94.45%	94.38%	94.48%	.....
1.....	94.34%	94.27%	94.44%	.....
1 1/2.....	94.25%	94.20%	94.36%	.....
2.....	94.24%	94.25%	94.37%	.....
2 1/2.....	94.24%	94.25%	94.36%	.....

	(1)	(2)	(3)	(4)	(5)
Hours.	Ethyl Alcohol.	Ethyl Alcohol.	Ethyl Alcohol.	Ethyl Alcohol.	No. 30 Denatured Alcohol.
2.....	138.50%	143.73%	104.80%	114.11%	97.29%
3.....	111.81%	103.24%	94.34%	94.14%	94.34%
4.....	93.39%	94.91%	93.97%	93.74%	94.07%
5.....	94.41%	94.45%	93.88%	.....	94.06%
6.....	94.17%	.....	93.82%	.....	94.02%
7.....	94.14%	.....	93.80%	.....	94.06%
8.....	94.10%	.....	93.77%	.....	.....

Co-operative Soapstock "B."

Saponifiable Glycerides.

	Method "A."	Method "B."
Oil and unsaponifiable.....	20.35%	21.32%
Unsaponifiable	1.05%	0.92%
Saponifiable glyceride.....	19.30%	20.40%

Black Grease No. 1.

Hours.	Ethyl Alcohol dried in oven.	Ethyl Alcohol dried in CO ₂	No. 30 Alcohol dried in oven
1/2.....	93.94%	.....	94.23%
1.....	93.83%	.....	94.12%
1 1/2.....			94.09%
2.....		96.26%	94.16%
2 1/2.....			
3.....		94.89%	.....
3 1/2.....			
4.....		94.10%	.....
4 1/2.....			
5.....		93.83%	.....
5 1/2.....			
6.....		94.03%	.....
6 1/2.....			
7.....		94.02%	.....

Co-operative Soapstock "A."

Hours.	Ethyl Alcohol dried in oven.	Ethyl Alcohol dried in CO ₂	No. 30 De- tured Alcohol.
1/2.....	45.44%	.....	45.71%
1.....	45.46%	.....	45.66%
1 1/2.....	.....	.....	45.65%
2.....	.....	45.59%	.....
3.....	.....	45.34%	.....
4.....	.....	45.26%	.....
5.....	.....	45.26%	.....

It is to be regretted that more results are not at hand, but a study of the results reported shows there to be as much, if not more variance, in the different tests on the same sample, by the same operator, using the same method of drying, extraction or alcohol as there is between tests in which the methods of drying are different or different alcohols are used, or different methods of extraction are used, or between the results of different operators.

As far as these results go, there is essentially no difference if No. 30 denatured alcohol is used for saponification in place of ethyl alcohol, or if an extraction method replaces the official, or if the fatty acids are dried in the oven or in a stream of carbon dioxide, if the weight, taken when the loss does not exceed .05-.10 per cent. in the following period of heating, is used in calculating the fatty acid. Further study of the Edeler method of drying is advisable before suggesting a change from the present. Work should be done with soapstocks from such oils as soya bean and linseed. Further work should be done on a method for neutral oil.

The chairman wishes to thank the members of the committee, Mr. Strack, Mr. Brownfield, Mr. Church, Mr. Morrison and Mr. Burmaster, and also Dr. Paquin and Mr. Fash for their co-operation.

C. P. LONG,
Chairman Soapstock Committee.

REFINING TEST COMMITTEE REPORT.

By J. H. Morrison, Procter & Gamble Company,
Ivorydale, Ohio.

In regard to the General Refining Test Committee, composed of the chairmen of each of the subrefining committees, the committee cannot make any definite report at this time.

It was thought to standardize the technique of the refining methods to cover all oils. Due, no doubt, to the severe retrenchment in many laboratories, it has been practically impossible to get sufficient data together upon which to draw any conclusions.

The writer feels that certain features of refining methods can be standardized, such as the shape of the propeller, the speed at which it shall be rotated at the various stages of the refining.

At the present time it seems that about everyone uses a different style of paddle and varying speeds, which lead only to nonuniform results. It may be that different grades of oil will require different treatment in respect to these features to get the lowest possible results, but the writer does not believe that uniform results can be accomplished without a more uniform technique.

I hope that at the convention this subject can be discussed, and possibly a line of work and some promise for co-operation can be had.

H. J. MORRISON,
Chairman Refining Test Committee.
(Continued on Page 53.)

(CHEMISTS' SECTION)

SOYA BEAN OIL REFINING COMMITTEE
REPORT.

By H. P. Trevithick, New York Produce Exchange,
New York City.

Below will be found a table showing some readings by Dr. Wesson of the Southern Cotton Oil Co. and Mr. Cluff of the American Cotton Oil Co. on soya-bean oils where the readings were made by daylight and by the use of the daylight lamp, Dr. Wesson using the Hess-Ives lamp and Mr. Cluff the Macbeth lamp.

The readings seem to agree so closely that the use of a daylight lamp in all color reading might be ad-

further by the new committee unless either the Priest or Eastman colorimeters should be adopted.

While the results do not check as closely as possible, they do seem to check better than the results given last year, probably due to the greater practice in reading soya-bean oil colors.

From my own experience, and from discussions which I have had with various members of the committee on soya-bean oil refining, I do not believe that we should change our present method of reading the colors of soya-bean oils at this time. This is due to the fact that in many cases no blue at all is needed, or desirable, and also to the fact that the need of blue

SAMPLE OIL—A. MacBeth Lamp—					
Mr. Cluff (A. C. O. Co.)					
Daylight readings.....	105Y-6.9R	70Y-6.6R	70Y-1B-7.7R	70Y-2B-8.3R	85Y-2B-8.7R
Lamp readings.....	105Y-6.5R	70Y-6.5R	70Y-1B-7.5R	70Y-2B-8.0R	85Y-2B-8.3R
SAMPLE OIL—A. Hess-Ives Lamp—					
Dr. Wesson (S. C. O. Co.)					
Daylight readings.....	.....	70Y-5.5R	.....	{ 70Y-2B-7.7R 35Y-2B-8.0R }	{ 70Y-3B-9.0R 35Y-3B-9.0R }
LAMP READINGS.....	.....	70Y-5.5R	.....	70Y-2B-8.0R	{ 70Y-3B-9.0R 35Y-3B-9.0R }
SAMPLE OIL—B.					
Dr. Wesson (S. C. O. Co.)					
Daylight readings.....	.....	72Y-9.0R	72Y-1B-9.3R	72Y-2B-9.5R	72Y-3B-10.5R
Lamp readings.....	.....	70Y-9.0R	70Y-1B-9.3R	70Y-2B-9.5R	12Y-3B-10.0R
SAMPLE OIL—B.					
Mr. Whitner (S. C. O. Co.)					
Daylight readings.....	.....	70Y-8.6R	70Y-1B-9.3R	70Y-2B-9.9R	.....
Lamp readings.....	.....	70Y-8.6R	70Y-1B-9.4R	70Y-2B-10.0R	.....

Table II contains all results on the color readings of soya-bean oil received by your chairman.

Chemist and Laboratory.	No blue used.	2—Using one blue.	3—Using two blue	4—Using blue three
SAMPLE A—				
Bogardus & Kniseley (Ellison).....	70Y-10.5R		70Y-1B-11.0R	70Y-3B-11.4R
S. C. O. Co. (Ravenel).....	70Y-9.0R		70Y-2B-11.2R	70Y-3B-11.7R
S. C. O. Co. (Strack).....	70Y-9.3R		70Y-2B-11.0R	70Y-3B-12.0R
Portsmouth C. O. Ref. Corp (Putland).....	70Y-10.1R		70Y-2B-10.1R	No match
Produce Exchange.....	70Y-11.0R		70Y-2B-12.2R	70Y-3B-12.6R
Average.....	70Y-10.0R		70Y-2B-11.1R	70Y-3B-11.9R
SAMPLE B—				
Bogardus & Kniseley (Ellison).....	70Y-7.0R		70Y-2B-7.5R	70Y-3B-7.8R
S. C. O. Co. (Ravenel).....	70Y-7.4R		70Y-2B-8.0R	70Y-3B-8.0R
S. C. O. Co. (Strack).....	70Y-7.0R		70Y-2B-7.9R	70Y-3B-8.3R
Portsmouth C. O. Ref. Corp (Putland).....	70Y-7.8R		70Y-2B-7.9R	70Y-3B-no match
Produce Exchange.....	70Y-7.4R		70Y-2B-8.3R	70Y-3B-8.6R
Average.....	70Y-7.3R		70Y-2B-7.9R	70Y-3B-8.4R
SAMPLE C—				
S. C. O. Co. (Wesson).....	70Y-7.0R			
Swift & Co. (Richardson).....	70Y-6.3R	70Y-0.4B-5.4R	No match	No match
Procter & Gamble (B).....	70Y-5.2R		70Y-2B-7.0R	70Y-3B-7.8R
Procter & Gamble (S).....	70Y-5.6R	50Y-1.0B-6.4R	70Y-2B-7.0R	70Y-3B-7.6R
Procter & Gamble (M).....	70Y-5.2R	55Y-1.0B-6.2R	70Y-2B-7.1R	70Y-3B-7.6R
American C. O. Co. (Cluff).....	70Y-6.6R	70Y-1.0B-7.7R	70Y-2B-8.3R	70Y-3B-no match
After 10 days' exposure, Dr. Wesson read:	70Y-5.5R		70Y-2B-7.7R	70Y-3B-9.0R
Average.....	70Y-5.9R	70Y-1.0B-6.7R	70Y-2B-7.6R	70Y-3B-8.0R
SAMPLE D—				
S. C. O. Co. (Wesson).....	72Y-9.0R	70Y-1B-9.3R	70Y-2B-9.5R	70Y-3B-10.5R
S. C. O. Co. (Whitner).....	70Y-8.6R	70Y-1B-9.3R	70Y-2B-9.9R	70Y-3B-....
Bogardus & Kniseley (Ellison).....	70Y-8.5R	70Y-1B-9.0R	70Y-2B-9.5R	70Y-3B-10.0R
S. C. O. Co. (Ravenel).....	70Y-8.3R	70Y-1B-9.5R	70Y-2B-11.0R	70Y-3B-11.0R
A. C. O. Co. (C. B. Cluff).....	70Y-8.4R	70Y-1B-8.4R	70Y-1B-....	70Y-3B-....
P. C. O. R. Corp. (Putland) A.....	70Y-8.8R	70Y-1B-8.8R	70Y-2B-no match	70Y-3B-no match
B.....	70Y-8.7R	70Y-1B-8.4R	70Y-2B-no match	70Y-3B-no match
C.....	70Y-8.8R	70Y-1B-8.6R	70Y-2B-no match	70Y-3B-no match
D.....	70Y-8.6R	70Y-1B-8.4R	70Y-2B-no match	70Y-3B-no match
New York Produce Exchange.....	70Y-9.2R	70Y-1B-9.9R	70Y-2B-no match	70Y-3B-no match
Average.....	70Y-8.7R	70Y-1B-9.0R	70Y-2B-10.0R	70Y-3B-10.5R

visable to remove one cause of differences between chemists—that due to differences in the light. This was brought out very strongly where some readings on cottonseed oil were made by the writer on a bright day, the readings being made at 9 A. M. and 1 P. M. The only difference was that at 1 P. M. the light was brighter, although in neither case was direct sunlight allowed to shine upon the apparatus or oils. The difference was about 0.5 red between the two series of readings.

This use of a daylight lamp might be investigated

does not seem to depend on the red content of the oil. It had seemed possible that we could use only the yellow and red up to a certain depth of red, such as 7, and then use 1 blue up to 10 or 11, and 2 blue above that limit, but the results on sample D are good without any blue, and the color of the oil was about 70 yellow—9.0 red.

Mr. Ellison of Bogardus & Kniseley suggested that it might be possible to make the use of blue optional with the chemist, but it seems to me that in that case we would have to compare readings by one chemist