THE EFFECT OF

CRUDE BOLLIE COTTONSEED OIL

UPON THE COLOR OF REFINED OIL FROM STORED CRUDE COTTONSEED OIL

by

R. H. FASH, THE FORT WORTH LABORATORIES, FORT WORTH, TEXAS

Presented as a part of the Crude Mill Operation Committee Report for 1933-1934

IN north and west Texas and Oklahoma some of the cotton bolls do not open by the normal maturing of the boll, but are broken open by the action of a frost or freeze. Cottonseed obtained from bolls thus opened or from bolls gathered before opening and opened in the process of ginning are termed bollie cottonseed, and the oil produced from these seed is designated as bollie oil. Normally, the free fatty acid content of crude bollie cottonseed oil is approximately the same as that of oil produced from cottonseed obtained from bolls that mature naturally. Crude bollie cottonseed oil has a refining loss higher than that of normal crude cottonseed oil, and the soapstock from the bollie oil is softer and contains more free oil than the soapstock from normal oil. The color of the refined oil from freshly produced bollie oil is as good as that from normal cottonseed oil having the same free fatty acid content. The flavor of the refined oil from bollie oil has a distinctive tang. The linters and cake obtained from bollie cottonseed are off in color.

In order to produce merchantable linters and cake, bollie cottonseed are mixed with normally matured cottonseed prior to crushing. The fact was noted that the crude oil obtained from this mixture would not, upon storing for only a short period of time, yield a prime colored yellow oil, though when originally stored, the refined oil produced from the crude was prime in color. The deterioration in color is so rapid that when freshly produced oil is shipped, the difference in color between the refined oil from the shipping sample and the destination sample sometimes amounts to 2 Red.

To determine the effect of this mixing of bollie cottonseed with normal cottonseed upon the color of the refined oil obtained from normal cottonseed oil, crude cottonseed oil produced from one-hundred per cent bollie seed was mixed in various proportions with crude cottonseed oil obtained from normal cottonseed and the mixtures stored in galvanized iron cans for thirty days. In addition, a mixture of fifty per cent crude bollie oil and fifty per cent normal crude oil was stored for thirty days in a clean glass bottle. The one-hundred per cent crude bollie oil and normal crude oil were also stored for the same length of time in galvanized iron cans. Refining tests were made upon the straight bollie and normal bolly crude oils at the beginning and end of the storage period, and upon the mixtures of the two crude oils at the end of the storage period. The results are given in the accompanying table. The figures tabulated in the column headed, "Calculated Color 35.0 Y" are based upon the color of the refined oils obtained upon refining separately the one-hundred per cent bollie oil and the normal oil at the end of the storage period. These results show that crude bollie cottonseed oil produces a deterioration of the color of the refined oil obtained from normal crude cottonseed oil with which the bollie crude oil is mixed.

STORED IN GALVANIZED IRON CANS

Bollie Crude Oil %	Normal Crude Oil %	Date Refined	F. F. A. %	Caustic Used	Refining Loss %	Refined Color 35.0 Y	Calculated Refined Color 35.0 Y	Difference from calculated color	Excess Deterioration % of Normal Oil Color
0	100	2-8	0.8	5.8%-14° Bé	7.1	4.7 R	.....	.....	...
100	0	2-8	0.9	6.0%-14° Bé	8.0	4.8 R	.....	.....	...
95	5	3-10	0.9	6.0%-14° Bé	8.1	11.1 R	10.6 R	0.5 R	9.1
90	10	3-10	0.9	6.0%-14° Bé	8.0	10.9 R	10.4 R	0.5 R	9.1
85	15	3-10	0.9	6.0%-14° Bé	8.2	10.8 R	10.1 R	0.7 R	12.7
80	20	3-10	0.9	6.0%-14° Bé	8.5	10.7 R	9.8 R	0.9 R	16.4
75	25	3-10	0.9	6.0%-14° Bé	8.2	10.4 R	9.6 R	0.8 R	14.6
70	30	3-10	0.9	6.0%-14° Bé	8.1	10.2 R	9.3 R	0.9 R	16.4
65	35	3-10	0.9	6.0%-14° Bé	8.0	10.0 R	9.0 R	1.0 R	18.2
60	40	3-10	0.9	6.0%-14° Bé	8.0	9.8 R	8.7 R	1.1 R	20.0
55	45	3-10	0.9	6.0%-14° Bé	8.0	9.7 R	8.5 R	1.2 R	21.8
50	50	3-10	0.9	6.0%-14° Bé	7.9	9.6 R	8.2 R	1.4 R	25.5
0	100	3-10	0.8	5.8%-14° Bé	7.6	5.5 R	.....	.....	....
100	0	3-10	1.0	6.2%-14° Bé	8.6	10.9 R	.....	.....	....
STORED IN GLASS BOTTLE									
50	50	3-10	0.9	6.0%-14° Bé	8.0	9.6 R	8.2 R	1.4 R	25.5

THE NEW PRESIDENT

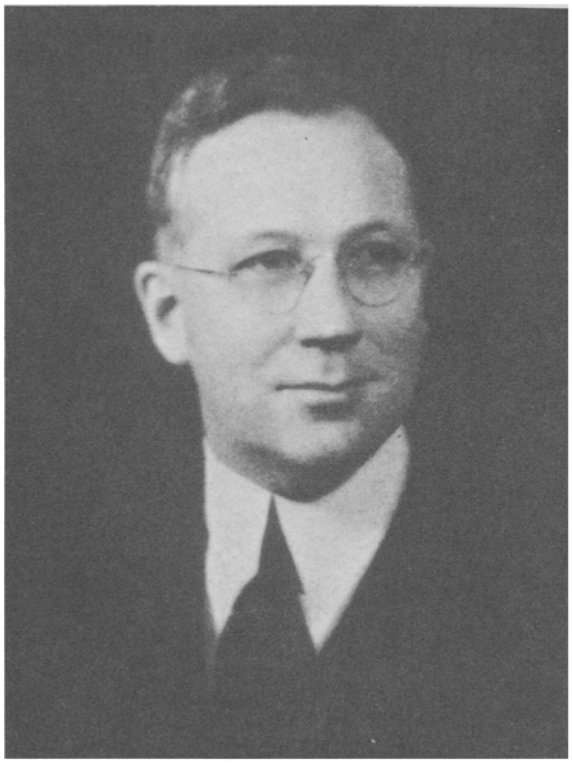
● W. D. HUTCHINS

W. D. Hutchins, the twenty-fifth President of The American Oil Chemists' Society, was born at Liberty, S. C., July 15th, 1896. He finished his preparatory school work at Liberty and then entered Clemson A. & M. College of South Carolina, from which he was graduated. While at Clemson he found that Chemistry was to be his first love, so he studied it diligently.

Immediately after graduation from Clemson, he entered the Head Laboratory of The Southern Cotton Oil Company at Savannah, Georgia, as a Chemist. There he worked under the late Dr. Frank N. Smalley, one of the founders of this Society and a Past President, until the death of Dr. Smalley. Subsequent to this, he was promoted and has served for over ten years now as District Chemist for The Southern Cotton Oil Company.

Mr. Hutchins has been a member of The American Oil Chemists' Society since 1920, and has served on various Committees for the Society; however, his chief work has been with the Refining and Color Committees. He is also an active member of The American Chemical Society and The American Society of Testing Materials. His long experience in the fields of fats, oils, water analysis, and fertilizers has well prepared him for his new position as the Society's President for 1934.

He is a capable Chemist, an untiring worker, and a loyal friend. The Society is fortunate in having W. D. Hutchins as its new leader.—(By. J. C. Howard, 204 East 50th Street, Savannah, Ga.)



J. P. HARRIS

THE PRESIDENT'S

FAREWELL ADDRESS

J. P. HARRIS, PRESIDENT
AMERICAN OIL CHEMISTS' SOCIETY
NEW ORLEANS, LA., MAY 30, 1934

In making my final report of the Society's progress to you today, I want to thank every member for the whole-hearted support which has made this progress possible.

Just a year ago, upon instruction of the Governing Committee, we sent out requests for volunteers for committee service, and were deeply gratified to have more than 60 per cent of the membership volunteer.

We felt apologetic because of our inability to make every appointment just as requested, because of having to limit committee membership to some extent.

But it is unheard of in other groups to have a membership sixty per cent of whom are actually actively participating in Society work. Nothing could more graphically portray the intense vitality of our Society. Mr. Vollertsen confirms the fact that an unusually large number of committee reports have already been received, and that the reported work of the committee is outstanding.

So I deem it a great privilege as well as pleasure to present this program to you, which includes so many unusually fine original papers as well as constructive committee reports.

I wish that time permitted personal commendation of the work of each committee, but since this is obviously impossible I shall content myself with calling particular attention to the work of two committees.

First, the Journal Committee. In pointing with pardonable pride to our Journal, I'm afraid that very few of us appreciate the fact that the chairman of the committee, W. H. Irwin, has been forced to put more of his personal time and energy into making it possible than is usually given by a paid worker. His dynamic force was from the very start certain to make it a success. The corner is turned for the Journal. It is well on its way to success.

I also wish to commend the work of the new managing editor, Mr. Greenleaf, and ask every one of you members to give him your support.

If every one of us here will agree to mention our Journal to those from whom we purchase, we cannot fail of greater success. Won't you do this?

Then there's the membership committee under the able leadership of W. D. Hutchins, who has always devoted himself unstintingly to society work, but especially so this year, to the end that we have back with us many old members and have secured many new members.

Many of the members of these committees, as well as the chairman, worked hard in preparing editorials and write-ups and in soliciting memberships.

The abstracts of Sheely, Bollens and Kistler are eagerly awaited by all technically trained men interested in our fields.

New committees have functioned ably under the strong leadership of Gill for the Color Glass Development Committee, and Hamner for the Ammonia Selenium Committee. Their reports are of great interest.

Also we have two new committees, covering a study of Soap Wrappers, L. F. Hoyt, chairman, and of Sulphonated Oils, Ralph Hart, chairman, whose reports will interest you at the next fall meeting. Thus the scope of our Society is broadening year by year.

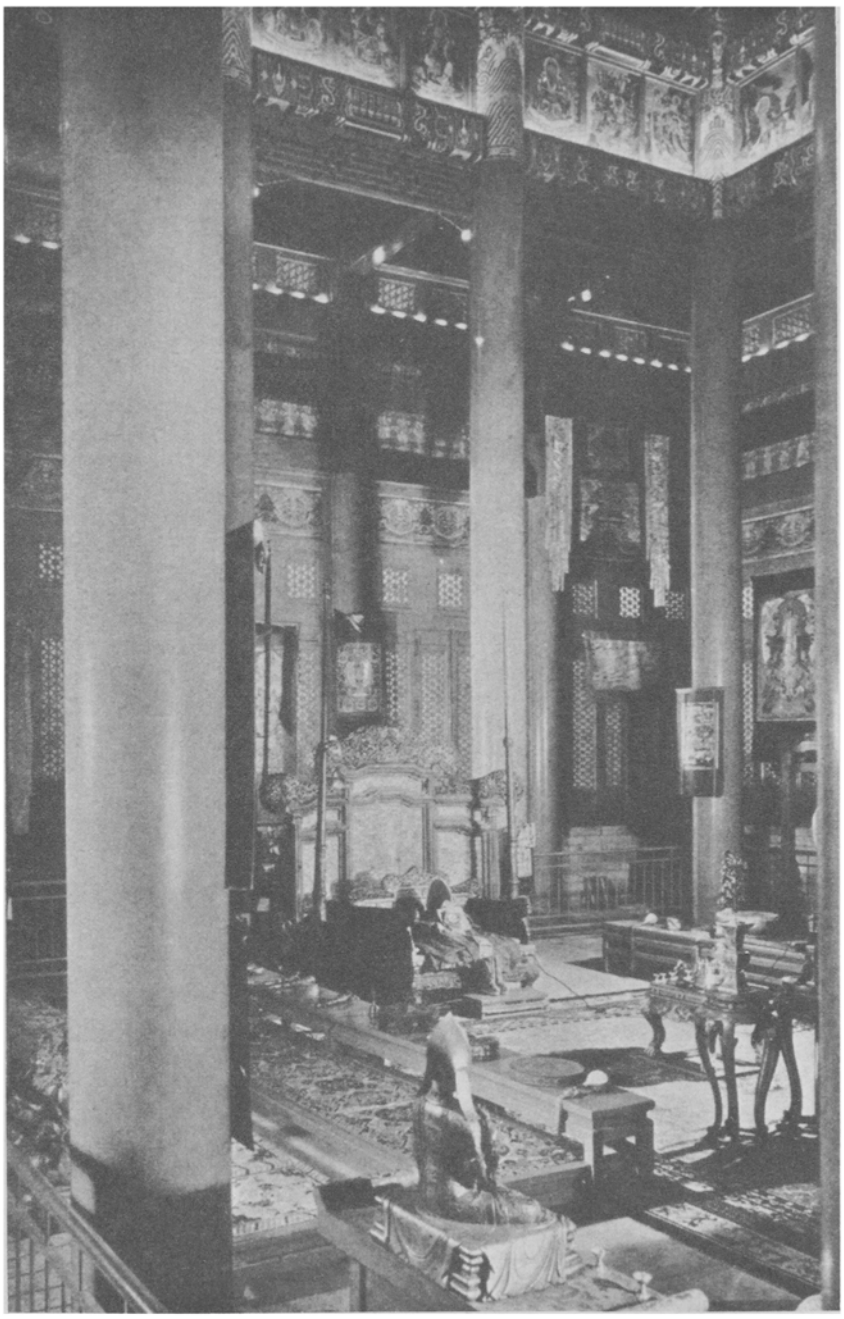
Deeply and sincerely appreciating your support this year, I ask your continuance of it for the man who will do so much better job in succeeding me.

(*Continued from page* 105)
consisting of several young ladies provided wonderful music for the dance which followed.

Those who attended this meeting of the Society will long remember it as one of the most pleasant events ever held in the old city of New Orleans.

THE CONVENTION THRU A KEYHOLE

Mr. Shipner is still wondering if John Vollertsen learned how to cure bacon on Thursday night. WERE WE SURPRISED!!! Many remarkable and hitherto undreamed of shots were contributed by our new president, Wayland Hutchins, upon the Metairie course. It is now recognized that the proper way to play the ninth hole is to drive to the eighth fairway, then lift your ball over the trees to the ninth green. Before this meeting Mayfields' sex appeal may have been doubted but those attending the banquet saw his talent with the ladies indisputably demonstrated. What do you suppose there is about the New Orleans climate that gives Maurice Durkee that far away look. And, boy, can he do the CARIOCA???? Two of our Chicago members seem to be increasingly sensitive to the attractions of the dark-eyed beauties of New Orleans year by year. Guess who? There was a reunion of the Damon and Pythias of our organization, Louis Gill and Dave MacIsaac. What a reunion! We deeply regret that the floor of the airport was so hard, as Allen Smith seemed to enjoy parking there. By the way Allen did you get that orchestra leader's address? Why that sorrowful expression on Nick's face? Just because Worthen took his best girl away from him. There's always another street car along later Nick. The Royal Order of Prairie Flower was revived at this meeting by the Terrific-Barrow duet. Ed was never in better form. We all wondered why Jack Harris was so high on the water wagon. We understand that one Manhattan cocktail made him sick. (By the way Mrs. Harris was also present.) Everyone present especially appreciated the wonderful hospitality extended by Jane and Janning Gannacheau. What is there about Ole New Orleans that makes its residents so attractive to the ladies? Ask Stryker and Shilstone. It took Shipner and Lament to show us the way to really enjoy golf. Wtih them every hole was the nineteenth. We wonder if Al MacGee has shown Will Irwin how to live yet. Did Sheely get his Creme de Yevette home? We all missed Andy Schwartz. Andy is a distinct success at most any function. Dr. Williamson kinda rubbed it in when he took four putts on the eighteenth green and still won. The talk by M. K. Thornton was enjoyed by all. The Texan put lots of personality into it. More of this type of paper is just what the doctor ordered. We wonder if he dodged all the brick bats successfully.



INTERIOR VIEW OF LAMA TEMPLE—CENTURY OF PROGRESS

CENTURY OF PROGRESS

A snow scene in the mountains—and all made of soap flakes, soap bars and Kitchen Klenzer—is one of the most natural looking of all artificial exhibits at A Century of Progress.

In the first diorama in the Horticultural Building one may see this snow scene. A rocky cliff covered with snow, the side of a log cabin, a waterfall and mountain stream, and trees with real leaves on them, with murals of distant mountains in the background complete this beautiful scene. As one looks at this peaceful scene, real water flows over the falls and goes to join the mountain stream which fades into the painting of the stream in the background. A leaf from a real tree falls on the glistening crusty snow, completing the illusion.

Even close observation would not convince one that the logs in the cabin are Big Jack Soap bars and the genuine-looking mortar which holds the logs together is Automatic Soap Flakes used as calking in the crevices, and that the glistening flaky substance which looks soft and down like real snow is merely Kitchen Klenzer and pumice stone.

This exhibit was designed by Mrs. M. F. Barrett, Kenilworth, Illinois, for the Fitzpatrick Brothers, Automatic Soap Flakes, Kitchen Klenzer, and Big Jack Soap.