Report of the Smalley Foundation Committee 1941-1942

We are presenting herewith the 24th report of the Smalley Foundation Committee of the American Oil Chemists' Society. During these past twenty-four years considerable progress has been made in the accuracy of the determination of Oil and Nitrogen on cottonseed meal. The results obtained in practically all determinations were slightly lower than last year. It must be understood, in gauging the accuracy of the results a difference of two points in either direction from the average is permitted without a deduction from the grade.

As usual, thirty samples of cottonseed meal were distributed to the collaborators.

There are attached to this report four tables indicating the standing in percentage of the members taking part. Table No. I gives the standing of 49 collaborators who reported oil determinations on all samples. Table No. II gives the standing of 59 collaborators who reported nitrogen results on all samples. Table No. III gives the standing of 49 collaborators who reported oil and nitrogen on all samples. In these tables we have taken into consideration the results of those reports which were received within the time specified in our original announcement of the Smalley Foundation work. In Table No. IV we have given the standing of those collaborators who reported on all samples, but some of whose reports were received too late to be included under the rules.

The winning collaborators are as follows:

The "American Oil Chemists' Society Cup" for the highest efficiency in the determination of both Oil and Nitrogen on all samples is awarded to Analyst No. 36, T. L. Rettger, The Buckeye Cotton Oil Company, Memphis, Tenn., with an average of 99.964 per cent. The average efficiency is lower than that of last year, which was 99.977 per cent. The certificate for second place goes to Analyst No. 48, A. G. Thompson, Jr., The Southern Cotton Oil Company, Columbia, S. C., who had an efficiency of 99.943 per cent, as compared with 99.961 per cent for last year.

The certificate for the highest efficiency in the determination of Oil only is awarded to Analyst No. 36, T. L. Rettger, The Buckeye Cotton Oil Co., Memphis, Tenn., with an average of 99.954 per cent, as compared with 99.968 per cent for last year. The certificate for second place goes to Analyst No. 48, A. G. Thompson, Jr., The Southern Cotton Oil Company, Columbia, S. C., with an efficiency of 99.943 per cent as compared with 99.932 per cent for last year.

The certificate for the highest efficiency in the determination of Nitrogen is awarded to Analyst No. 51, The Barrow-Agee Laboratories of Memphis, Tenn., with an average of 99.989 per cent, as compared with 99.996 per cent for last year. The certificate for second place goes to Analyst No. 80, J. F. Thompson, Armour and Company, Oklahoma City, Okla., with an average of 99.985 per cent, as compared with 99.990 per cent for last year.

We are again including in this report a list of the previous winners of the highest award for both Oil and Nitrogen. They are as follows:

1918-1919 G. C. Hulbert—Southern C. O. Co., Augusta, Ga.
1919-1920 G. C. Hulbert—Southern C. O. Co., Augusta, Ga.
1920-1921 C. H. Cox—Barrow-Agee Lab's., Memphis, Tenn.

TABLE I

Determination of Oil

Analyst No.	Points off	Per cent efficiency
36	9	99.954
48	11	99.943
4	16	99.918
83	17	99.912
45-49	18	99.908
7	20	99.897
66	21	99.892
21	22	99.888
31-51	24	99.877
53	25	99.872
32-74-85	31	99.841
55	32	99.835
39	39	99.800
38	41	99.789
64	50	99.743
52	52	99.733
3-18	54	99.723
67	57	99.707
15	59	99.697
37	64	99.672
68	67	99.656
57	68	99.650
63-80	70	99.641
9-82	82	99.579
54	85	99.564
77	87	99.553
56	89	99.542
59	93	99.522
23	94	99.518
50	97	99.502
17	98	99.496
2	104	99.465
20	106	99.456
26	116	99.404
79	119	99.388
1	166	99.148
34	223	98.855
69	247	98.732
29	272	98.603

TABLE II

Determination of Nitrogen

Analyst No.	Points off	Per cent efficiency
51	2	99.989
80	3	99.985
36-77	5	99.974
54	7	99.965
83	8	99.950
45	9	99.954
24-48-66	11	99.943
2	12	99.938
49	13	99.934
23	14	99.928
4-53	16	99.918
46-55	18	99.908
74	20	99.897
32-85	21	99.892
31-41	22	99.888
38	24	99.877
57	25	99.872
56	26	99.866
7-35-43	27	99.862
15-50	28	99.857
12	29	99.851
70	33	99.831
37-59	35	99.820
29	36	99.815
21-39	37	99.811
18	40	99.795
13	41	99.789
1	42	99.785
17	46	99.765
68-69	50	99.743
3	53	99.728
64	58	99.703
20	65	99.666
63	75	99.615
79	76	99.611
26	81	99.584
34-82	85	99.564
67	86	99.558
52	118	99.395
6	154	99.211
71	175	99.103
9	441	97.739

1921-1922	Battle Lab's.—Montgomery, Ala.
1922-1923	Battle Lab's.—Montgomery, Ala.
1923-1924	L. B. Forbes—Memphis, Tenn.
1924-1925	E. H. Tenent—International Sugar Feed Co. No. 2, Memphis, Tenn.
1925-1926	Battle Lab's.—Montgomery, Ala.
1926-1927	W. F. Hand—Miss. State College, State College, Miss.
1827-1928	E. H. Tenent—International Sugar Feed Co., Memphis, Tenn.
1928-1929	Geo. W. Gooch Lab's.—Los Angeles, Calif.
1929-1930	Southwestern Lab's.—Dallas, Texas
1930-1931	W. F. Hand—Miss. State College, State College, Miss.
1931-1932	J. N. Pless—Royal Stafolife Mills, Memphis, Tenn.
1932-1933	J. B. McIsaac—International Veg. Oil Co., Savannah, Ga.
1933-1934	W. F. Hand—Miss. State College, State College, Miss.
1934-1935	W. F. Hand—Miss. State College, State College, Miss.
1935-1936	N. C. Hamner—Southwestern Lab's., Dallas, Texas
1936-1937	N. C. Hamner—Southwestern Lab's., Dallas, Texas
1937-1938	W. F. Hand—Miss. State College, State College, Miss.
1938-1939	W. F. Hand—Miss. State College, State College, Miss.
1939-1940	A. G. Thompson, Jr.—Southern C. O. Co., Columbia, S. C.
1940-1941	Russell Haire—Planters Mfg. Co., Clarksdale, Miss.
1941-1942	T. L. Rettger—Buckeye Cotton Oil Co., Memphis, Tenn.

Mr. Thos. C. Law has for many years been taking care of the preparation and distribution of the samples. His painstaking and careful work is indicated by the lack of complaints from the collaborators and we wish to commend his efforts in behalf of the Society.

L. B. CALDWELL
T. C. LAW
W. C. MOOR
J. N. PLESS
E. H. TENENT
J. J. VOLLERTSEN, Chairman

TABLE III
Determination of Oil and Nitrogen

Analyst No.	Per cent efficiency
36	99.964
48	99.943
51	99.933
45-83	99.931
49	99.921
4-66	99.918
53	99.895
31	99.883
7	99.880
55	99.872
74	99.869
32-85	99.867
21	99.850
38	99.833
80	99.813
39	99.806
15	99.777
54	99.765
77	99.764
57	99.761
18	99.759
37	99.746
3	99.726
23-64	99.723
56	99.704
2	99.702
68	99.700
50	99.680
59	99.671
67	99.633
17	99.631
63	99.628
82	99.572
52	99.564
20	99.561
79	99.500
26	99.494
1	99.467
69	99.238
29-34	99.209
9	98.659

TABLE IV
Special Table

Analyst No.	Points off	Per cent efficiency
Determination of Oil		
16	54	99.723
5	97	99,502
30	101	99.481
Determination of Nitrogen		
30	25	99.872
5	28	99.857
16	73	99.626
Determination of Oil and Nitrogen		
5	....	99.680
30	....	99.677
16	....	99.675

Abstracts

Oils and Fats

Edited by M. M. PISKUR and SARAH HICKS

THE THIAMINE REQUIREMENT OF THE ALBINO RAT AS RELATED TO THE CARBOHYDRATE, PROTEIN AND FAT OF THE DIET. W. W. Wainio. *Federation Proc. pt. 11, 1,* 87-88 (1942). The calcn. of requirement values in terms of the nutrients contd. in the diets reveals that each g. of sucrose required the presence of 2.94 micrograms of thiamine in the diet and that each g. of casein and fat required the presence of 1.81 and 1.29 micrograms of thiamine, resp.

THE VITAMINS A AND D POTENCY OF THE OILS OBTAINED FROM THE LIVER, INTESTINES, BODY AND OFFAL OF SHAD, ALOSA SAPIDISSIMA WILSON, AND MACKEREL, SCOMBER SCOMBRUS L. L. I. Pugsley, et al. *Can. J. Research, 20D,* 167-9 (1942). Data are presented on the percentage of liver and intestines in the fish, percentage of oil in body, liver, intestines, and offal and the vitamins A and D potency, iodine value, and percentage of unsaponifiable matter in these oils of shad and mackerel.

VITAMIN E, COD LIVER OIL AND MUSCULAR DYSTROPHY. H. A. Mattill and Calvin Golumbic. *J. Nutr. 23,* 625-31 (1942). Evidence is presented to show that no distinction need be made between a cod-liver oil-induced muscular dystrophy in rabbits and the nutritional muscular dystrophy produced by lack of vitamin E. None of the members of the vitamin B complex appears to be concerned with nutritional muscular dystrophy.

VITAMIN B_1 PANTOTHENIC ACID AND UNSATURATED FAT ACIDS AS THEY AFFECT DERMATITIS IN RATS. L. R. Richardson, A. G. Hogan and K. F. Itschner. *Missouri Agr. Expt. Sta. Research Bull. 333,* 3-12 (1941). The addn. of pyridoxine and pantothenic acid to a low-fat basal ration prevented or healed the charac-