from the iodine numbers and 4-hour thiocyanogen numbers (6) are given in Table II.

Molecular distillation of these fractions effected further slight fractionation comparable to that shown in Table I.

The data in Table II suggest that crystallization methods may be used to advantage in connection with other physical and chemical methods for the separation of the oil components. The high percentage of linoleic acid glycerides present in Fraction G indicates the presence of trilinolein, whereas the high saturated-acid content (combined as glycerides) of Fraction A suggets a concentration of oleo- and linoleo-dipalmitins.

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Report Smalley Foundation Committee

WE ARE presenting herewith the 22nd report of the Smalley Foundation Committee of the American Oil Chemists' Society. During these past twenty-two years considerable progress has been made in the accuracy of the determination of oil and nitrogen on cottonseed meal. While the results obtained in the determination of nitrogen were slightly lower than last year, this is the first time, to our knowledge, in which any collaborator went through the season without the loss of any point in the determination of oil. This record was made by Mr. A. G. Thompson, Jr., of the Southern Cotton Oil Company Laboratory at Columbia, S. C. 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. It is also interesting to note that six of the collaborators were tied for first place in the determination of nitrogen.

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 60 collaborators who reported oil determinations on all samples. Table No. II gives the standing of 68 collaborators who reported nitrogen results on all samples. Table No. III gives the standing of 60 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. 55, A. G. Thompson, Jr., Southern Cotton Oil Company, Columbia, S. C., with an average of 99.993 per cent. The average efficiency is higher than that of last year, which was 99.964 per cent. The certificate for second place goes to Analyst No. 79, Chas. W. Rice and Company, Columbia, S. C., who had an efficiency of 99.987 per cent, as compared with 99.942 per cent for last year.

The certificate for the highest efficiency in the determination of oil only is awarded to Analyst No. 55, A. G. Thompson, Jr., Southern Cotton Oil Company, Columbia, S. C., with an average of 100.00 per cent, as compared with 99.947 per cent for last year. The certificate for second place goes to Analyst No. 79, Chas. W. Rice and Company, Columbia, S. C., with an efficiency of 99.989 as compared with 99.943 per cent for last year.

The certificate for the highest efficiency in the determination of nitrogen is awarded to Analysts Nos. 13, 28, 51, 55, 64 and 79, Barrow-Agee Laboratories, Memphis, Tenn.; F. F. Hasbrouck, Allied Mills, Inc., Peoria, Ill.; E. H. Tenent, Woodson-Tenent Company, Memphis, Tenn.; A. G. Thompson, Jr., Southern Cotton Oil Company, Columbia, S. C.; T. L. Rettger, Buckeye Cotton Oil Company, Memphis, Tenn.; Chas. W. Rice and Company, Columbia, S. C., with an average of 99.985 per cent, as compared with 99.996 for last year. The certificate for second place goes to Analysts Nos. 8 and 85, The Battle Laboratories, Montgomery, Ala., and Armour and Company, Chicago, Ill., the analytical work having been done by L. E. Norem, with an average of 99.975 per cent, as compared with 99.990 per cent for last year.

We thought it might be well to include 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.
1921-1922	Battle Lab's, Montgomery, Ala.
1922-1923	Battle Lab's, Montgomery, Ala.
1923-1924	L. H. 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.
1927-1928	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.

We wish again to commend the careful and painstaking work of Mr. T. C. Law in the preparation and distribution of samples. As we have stated previously, few of us realize the amount of work required to handle this phase of our collaborative endeavors and members as a whole should be grateful to him for assuming this burden.

TABLE I.—DETERMINATION OF OIL

Analyst No.	Points off	Per Cent Efficiency
55	0	100.000
79	2	99.989
9-51	3	99.985
40	11	99.944
8-64	12	99.940
24	14	99.929
37-38-47	18	99.909
77	21	99.895
87	23	99.884
19-29-56	25	99.875
6	26	99.869
85	28	99.860
15-23	29	99.854
18-68	30	99.849
27	31	99.845
13-30-50	33	99.834
12	35	99.823
58	37	99.814
11-20-52	39	99.804
88	40	99.799
21-59	44	99.778
26	45	99.774
82	46	99.769
5	47	99.763
76	48	99.759
14	53	99.733
3-83	55	99.724
1-57-65-69	64	99.679
17	72	99.638
16	76	99.618
74	87	99.563
81	88	99.558
86	106	99.468
61	110	99.446
49-84	111	99.442
4	120	99.397
2	121	99.392
53	132	99.336
22	177	99.110
71	186	99.065
60	194	99.024
48	205	98.970

TABLE II.—DETERMINATION OF NITROGEN

Analyst No.	Points off	Per Cent Efficiency
13-28-51-55-64-79	3	99.985
8-85	5	99.975
3-17-38	6	99.970
40	7	99.966
2-4-24-37	10	99.951
20-44	11	99.945
5-9-29	12	99.940
15	13	99.936
14-19-87	14	99.930
56	15	99.925
12-18-22-60	16	99.921
6-21-58	17	99.915
82	18	99.910
27	19	99.906
26	21	99.896
76	22	99.891
1	24	99.881
59	25	99.876
36-52	27	99.866
11-50	28	99.861
47	31	99.846
23	32	99.840
61-86	33	99.836
81	35	99.825
43-65-69-84-88	36	99.821
77	37	99.816
68-75	38	99.810
42	41	99.796
57	43	99.787
16	44	99.781
53	50	99.751
49	63	99.687
71	69	99.657
32	71	99.646
48	83	99.587
30	88	99.563
41	103	99.488
74	188	99.064
83	201	99.000

TABLE III.—DETERMINATION OF OIL AND NITROGEN

Analyst No.	Per Cent Efficiency
55	99.993
79	99.987
51	99.985
9-64	99.963
8	99.958
40	99.955
24-38	99.940
37	99.930
85	99.918
13	99.910
29	99.908
87	99.907
19	99.903
56	99.900
15	99.895
6	99.892
18	99.885
47	99.878
27	99.876
20	99.875
12	99.872
58	99.865
77	99.856
5	99.852
50	99.848
3-21-23	99.847
82	99.840
26-52	99.835
11	99.833
14	99.832
68	99.830
59	99.827
76	99.825
88	99.810
17	99.804
1	99.780
65-69	99.750
57	99.733
16	99.700
30	99.699
81	99.692
4	99.674
2	99.672
86	99.652
61	99.641
84	99.632
49	99.565
53	99.544
22	99.516
60	99.473
83	99.362
71	99.361
74	99.314
48	99.279

TABLE IV.—SPECIAL TABLE
DETERMINATION OF OIL

Analyst No.	Points off	Per Cent Efficiency
7	38	99.808
62	81	99.593
70	101	99.492
10	119	99.401

DETERMINATION OF NITROGEN

7	11	99.945
62	34	99.831
25	60	99.701
10	66	99.672
70	87	99.567

DETERMINATION OF OIL AND NITROGEN

7	99.877
62	99.712
10	99.537
70	99.530

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