−50°C. this splitting was even more pronounced; AB was about 0.9 gauss and AC was about 1.6 gauss. At −62°C. the splitting was very sharply defined as in Figure 3d. Thus the sample has set so that some of the molecules which possessed a very free form of motion are now very slightly restricted.

Unstabilized Margarine Sample. This showed similar effects to the stabilized margarine except that from −78°C. upward the general molecular motion was not so marked. Thus at −78°C. the unstabilized sample gave a broader line. The second moment was 19.1 ± 1.4 gauss^2, and the line width was 8.4 ± 0.4 gauss. Also the narrow line disappeared at a higher temperature, *i.e.*, at about −55°C. At −49°C. its line width was 1.9 gauss, at −14°C. this had decreased to 1.2 gauss, and at 19.5°C. it was 1.0 gauss so that the line width was at all temperatures broader than with the stabilized sample. (The curve corresponding to the liquid disappeared at −14°C.)

The broad line showed about the same line width variations as with the stabilized sample. In agreement with the above conclusions of less molecular motion in the sample the line did not sink into the general noise level until temperatures above 11°C. were employed.

The measurements at 90°K removed any differentiation between the two samples since the second moment was 24.7 ± 0.4 gauss^2 and the line width was 14.2 ± 0.2 gauss.

Acknowledgment

We wish to thank H. B. Oakley and H. Lavery for the dilatometric measurements and the directors of Unilever Ltd. for permission to publish the information given in this paper.

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[Received September 22, 1959]

Report of the Smalley Committee, 1959-1960

HEREWITH is presented the 42nd annual report of the Smalley Committee. Again this season nine different types of samples were distributed by seven subcommittees. These were cottonseed, soybeans, peanuts, meal, vegetable oils, tallow and grease, glycerine, drying oils, and edible fats. In all, 4,408 samples were distributed to 506 collaborators, and about 15,000 results were tabulated. Table 1 shows the distribution and participation. There was a slight increase in participation of about 3% this season.

As of March 21, 1960, the Smalley account on the A.O.C.S. books showed $7,249.00 in receipts and $6,992.67 in expense, leaving a net of $256.33. This net will be decreased by at least $150 by charges yet to be received. A new mixer was purchased for preparation of the cottonseed samples at a cost of $382.50. A detailed accounting has been given to the Governing Board, and a final report to the collaborators, summarizing the work and listing the relative standing, based on our various grading systems.

It is fitting to express thanks to various subcommittee members for their contributions this past season:

K. H. Fink, Armour and Company, for tabulating and mailing the tallow and grease results and calculating the final grades; he also assisted with the edible fat tabulations

J. F. Anodide, Lever Brothers Company, for tabulating and mailing the soybean oil results

J. P. Hughes, Southern Regional Research Laboratory, for tabulating and mailing the cottonseed oil results

R. A. Decker, Armour and Company, for calculating the final grades on the vegetable oils

E. H. Tenent Jr., Woodson-Tenent Laboratories, for preparing and shipping the vegetable oils and tallow and grease samples

S. J. Rini, HumKo Company, for selecting the bulk vegetable oil

R. B. Jones, Darling and Company, for selecting and shipping the bulk tallow and grease samples

G. Conner Henry, Law and Company, for handling the preparation of the cottonseed, meal, and peanut samples

J. L. Hale, Swift and Company, for the preparation and distribution of the edible fat samples

Bart Teasdale, Canada Packers Ltd., for remailing the vegetable oil and the tallow and grease samples in Canada

George Reid, Spencer Kellogg and Sons, for the preparation and mailing of the drying oil samples.

TABLE 1

	Number of collaborators	Number of samples	No. of determinations per sample
Cottonseed	42	10	6
Soybeans	38	10	2
Peanuts	11	7	5
Meal	143	15	3
Vegetable oils	82	6	3
Tallow and grease	83	5	7
Glycerine	24	5	5-3
Drying oils	15	6	5
Edible fats	53	5	14

Reasonably sound grading systems have been established in all the series, and certificates of proficiency have been presented this year in all categories.

Cottonseed. With 42 chemists participating, first place was a tie between Ben C. White, Barrow-Agee Laboratories, Shreveport, La., and Paul D. Cretien, Texas Testing Laboratory, Dallas, Tex., with grades of 99.70%. Honorable mention was given to W. N. C. Kesler, Woodson-Tenent Laboratory, Little Rock, Ark., with 98.26%.

Soybean. First place among 38 chemists was a three-way tie, all with grades of 100%, for B. D. Brock, Barrow-Agee Laboratory, Greenwood, Miss.; W. D. Wadlington, Woodson-Tenent Laboratory, Chicago, Ill.; and J. G. Bowling, Woodson-Tenent Laboratory, Des Moines, Ia. Honorable mention was given to E. H. Tenent Jr., Ben C. White, Robert H. Hein, W. J. Johnson, T. C. Law, and R. A. Preckschat, with grades of 99.40%.

Peanut. Of the 11 chemists participating in this series first place was won by Mr. Cretien with 99.76%; second place by W. C. Dean, Dothan Oil Mill, Dothan, Ala., with 99.68%; and honorable mention by P. C. Whittier, Law and Company, Wilmington, N.C., with 98.92%.

Tallow and Grease. There were 83 collaborators, of whom Harry Gebel, Swift and Company, Hammond, Ind., won first place with a grade of 100%; D. S. Brake, General Testing Laboratory, Vancouver, B.C., second place with 99.36%; and E. R. Hahn, Hahn Laboratories, Columbia, S.C., honorable mention.

Vegetable Oils. With 82 collaborators participating, the first place certificate was given to P. L. Phillips, Barrow-

Agee Laboratory, Jackson, Miss., and second place to F. M. Tindall, HumKo Company, Memphis, Tenn. Honorable mention was shared by J. R. Mays Jr., Barrow-Agee Laboratories, Memphis, Tenn., and William Stewart, Swift and Company, Atlanta, Ga.

Edible Fats. Of the 53 participants John Price, Shortening Corporation of America, Jersey City, N.J., won first place with 99.44%; F. S. Kosco, Armour and Company, Chicago, Ill., second place with 99.38%; and Mr. Stewart honorable mention with 99.34%.

Glycerine. First place among 24 collaborators was awarded to A. L. Smith, Procter and Gamble Company, Sacramento, Calif., with 100%; second place to J. H. Dietz, Harshaw Chemical Company, Gloucester City, N.J., with 98.53%; and honorable mention to W. R. Trent, Colgate-Palmolive Company, Jersey City, N.J.

Drying Oils. With 15 chemists participating, first place went to Vern Bloomquist, Minnesota Linseed Oil Company, Minneapolis, Minn., with 96.25%; second to O. W. Johanson, Archer-Daniels-Midland Company, Minneapolis, Minn., with 94.50%; and honorable mention to two: G. H. Kyser, General Mills Inc., Belmond, Ia., and C. A. Lathrap, Curtis and Tompkins Ltd., San Francisco, Calif.

Meal. This, the largest and the original Smalley series, had 143 chemists participating this season, the greatest number in history.

First place for moisture was given to H. L. Hutton, Woodson-Tenent Laboratory, Clarksdale, Miss., with 99.80%; second place to Mr. Hein, General Mills Inc., Belmond, Ia.; and honorable mention to others too numerous to list.

On the determination of oil first place was attained by two chemists in a tie: M. A. Clark, Hartsville Oil Mill, Hartsville, S.C., and D. H. Turner, Pattison's Southwest Laboratory, Harlington, Tex., with scores of 100%. Honorable mention was given to Biffle Owen, Planters Manufacturing Company, Clarksdale, Miss., and to R. L. Pope, Pope Testing Laboratory, Dallas, Tex., with grades of 99.80%.

Certificates for proficiency in the estimation of crude fiber were given to Mr. Brock with 99.80% and to Mr. Hahn with 99.20%.

Mr. Hutton attained first place in the determination of nitrogen with a score of 100%. Two others were tied with 99.80%, forcing recalculation and resulting in second place to Mr. Mays and honorable mention to D. B. McIsaac, Kershaw Oil Mill, Kershaw, S.C.

The Smalley Cup, for combined proficiency on the determination of moisture, oil, and nitrogen on meal was won this year by Mr. Hutton with a grade of 99.80%. Second place went to Mr. Mays, with 99.52%. Mr. Hahn won honorable mention with 99.24%.

R. T. DOUGHTIE JR. — T. J. BALDWIN
LOYD V. ANDERSON — J. P. HEWLETT
D. L. HENRY — W. J. MILLER, vice chairman
D. V. STINGLEY — R. W. BATES, chairman

Some Characteristics of Kidney and Liver Lipids from the American Antelope[1]

GLENN J. MILLER, Division of Agricultural Biochemistry, University of Wyoming, Laramie, Wyoming

As part of an investigation into antelope fertility, doe antelope were collected from an area in Wyoming considered to be optimum for antelope propagation. Three collections were made about one month apart during the latter part of the gestation period (March, April, May). Since the livers and kidneys of these animals were available, it was decided to extract and partially characterize the lipids in these organs.

Experimental

Each collection consisted of five animals, all of which were carrying twin fawns. The organs were placed in iced containers immediately and were stored at −20°C. in the laboratory.

Portions (about 50 g.) of each liver lobe and of each kidney were diced with a scalpel to about 3 mm.[3] and mixed thoroughly. About 8 g. of each mixture were spread along the inside of alundum extraction thimbles (30 × 80 mm.), and the extractions were performed as previously reported (1). Lipid phosphorus was determined by the procedure of Chen *et al.* (2). The amount of phospholipids was then estimated by multiplying the percentage of phosphorus by a factor of 25 (3). Total cholesterol was determined by the method of Pearson *et al.* (4) with the following modifications.

Two or three ml. of a petroleum ether (b.p. 60–71°C.) solution of known lipid concentration (about 5 mg. of liver lipid and about 4 mg. of kidney lipid) were transferred to a 3-ml. Coleman cuvette. The solvent was removed under reduced pressure, and 0.5 ml. of water was added to each cuvette. The reagents of the original method were then added to the cuvette. After the addition of the color developing reagent (sulfuric acid), 0.5 ml. of chloroform was added to prevent the precipitation of the lipid; this did not interfere with the color production. Individual blanks were prepared in the same manner except that the color developing reagent was not added. These individual blanks were necessary because the lipid solutions did not have uniform absorption at 550 mμ.

Iodine values were determined by the brominating procedure of Byrne and Johnson (5).

Results and Discussion

It should be emphasized that these antelope were collected from an area considered adequate for antelope propagation. Observations have indicated that there is a high antelope birth rate (fawn-doe ratio of 92:100). Therefore it could be assumed that these are normal animals.

It is evident in Table I that the lipid values of both the kidney and liver did not show any significant changes during the three collections. This would imply that during the latter part of the gestation period there are no major changes in the lipid metabolism in the kidney and liver.

The percentages of total lipids in the kidney and liver of antelope do not differ appreciably from those values reported for beef (6). Also the cholesterol levels of these tissues are similar to those listed for other

[1] Published with approval of the Director, Wyoming Agricultural Experiment Station, as Journal Paper No. 123.