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]

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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

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TABLE I

Kidney and Liver Lipid Values

Lipid value	Kidney			Liver		
	March	April	May	March	April	May
Total Lipids [a]	17.0 ± 0.7 [b]	17.0 ± 0.9	17.3 ± 0.8	20.1 ± 0.9	20.2 ± 0.7	20.0 ± 0.4
Phospholipids [a]	10.3 ± 0.4	10.1 ± 0.2	10.3 ± 0.3	11.9 ± 0.3	12.0 ± 0.2	12.1 ± 0.1
Total cholesterol [a]	1.52 ± 0.03	1.53 ± 0.02	1.55 ± 0.03	1.02 ± 0.02	1.05 ± 0.02	1.05 ± 0.03
Iodine value of total lipids	71.5 ± 1.8	72.7 ± 2.0	72.9 ± 1.7	69.5 ± 0.8	70.1 ± 2.8	70.0 ± 1.5

[a] Expressed as percentage of dry tissue.
[b] Standard deviations.

species (7). The percentage of phospholipids in the kidney of antelope is very similar to that of beef, but this value for antelope liver is lower than that of beef (6).

The iodine values listed in Table I can only be used to indicate that there was no major change in the unsaturation of kidney and liver lipids during the latter part of the gestation period. Listing average iodine values for the lipids in tissues that are directly affected by dietary lipids is not possible.

Summary

The percentages of total lipids, phospholipids, and cholesterol in the kidney and liver of pregnant antelope are reported. The iodine values of the total lipids in these two organs are also listed. By the use of three collections of the antelope made about one month apart during the latter part of the gestation period, it was shown that there were no significant changes in the above lipid values during this period.

The lipid values were very similar to those values obtained for beef with the exception that the antelope livers contained less phospholipids. Iodine values were not compared since they are so easily influenced by dietary lipids.

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Studies in the Development of Antibacterial Surfactants. I. Institutional Use of Antibacterial Fabric Softeners

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OVER the past decade or two, institutions and hospitals in particular have been burdened with an ever-increasing problem of controlling bacterial cross-contamination. The development of powerful antibiotics has been countered in nature with the emergence of an increasing number of antibiotic-resistant strains, especially of *Staphylococcus aureus*. Carl W. Walter and co-workers at the Peter Bent Brigham Hospital in Boston (1, 2) have postulated a plausible mechanism for cross-contamination. The increasing morbidity and mortality rates attributable to staphylococcal infections have been well documented in the medical literature (3).

The present series of studies was undertaken in an effort to combat bacterial cross-contamination in hospitals by chemical means. It was recognized that a three-pronged method of attack was required, namely, treatment of hospital linens to render them bacteriostatic, treatment of the patients' skin, and, lastly, treatment of all hard surfaces, such as walls, floors, etc.

The present study deals with the first phase of this program, the treatment of linens. A rinse treatment of institutional linens appeared to be a good approach and, in view of previously reported studies (4), cationic fabric softeners were selected as the vehicle for the incorporation of antibacterial agents. As a rule, the cationic softener is the last step in the wet processing of linens. This practice minimizes the neutralization of the cationic agent by anionic (detergent) substances used in washing. Furthermore a cationic softener which is exhausted onto cellulosic fibers is a better carrier for an antibacterial agent than a carrier which is not preferentially adsorbed. Lastly the softening of the linens adds to the comfort of hospital patients and at the same time aids in the processing of the linens in the hospital laundry.

It was realized that antibacterial activity should extend over a broad spectrum of organisms. An organo-mercurial, phenylmercuric propionate was selected because of its effectiveness against gram-positive organisms, gram-negative organisms, and fungi. Various resistant strains of *S. aureus*, as well as the standard F.D.A. strain, were used as the test organisms representative of the gram-positive class of micro-organisms