THE TULSA MEETING OF THE AMERICAN CHEMICAL SOCIETY

This was one of the most enjoyable meetings ever held by the Society. Attendance is estimated between five hundred and a thousand; not too many to make the sessions crowded but plenty to make them interesting. Charles K. Francis, Chairman of the Oklahoma Section, with his many assistants, made the meeting one long to be remembered by those present. Oklahoma is the capital city of the Petroleum Oil Industry, and the general symposium on lubrication was very fully attended by those particularly interested in this subject.

It is not generally known that Oklahoma is the second largest cotton producing state in the country. The symposium on cotton and its products and vegetable oils was therefore, quite appropriate to the occasion. The number of papers and attendance at the cotton symposium were not as large by any means as at the petroleum division; but nevertheless some very interesting papers and facts were brought out.

Instead of the usual banquet the visitors were entertained by a combination evening of bridge, dancing and fashion show, which everyone enjoyed immensely. On Wednesday evening there was a very entertaining smoker, followed with unusually elaborate refreshments. Everybody left Tulsa impressed with the whole-hearted hospitality of its inhabitants and of entertainment committees in particular.

1. C. J. Esselen, Jr., read a very interesting paper on the "Importance of Cotton Cellulose as a Chemical Raw Material. He described the manufacturing of cotton linters as a preparatory step in cotton oil manufacture and then went into its various uses such as smokeless powders, rayon, artificial leather, automobile lacquers, celluloid and—what a few people would suspect—food adulteration. He did not state, however, just how it was used in this important industry.

2. John Malowan, New Orleans, read a very timely paper on the "Deterioration of Cottonseed by Moisture." He indicated the great losses occurring from this cause, and also various measures which are taken to combat them. The past season, with the abundant rainfall at the time when the cotton should be gathered, gives a terrible example of what may happen to the crop under these climatic conditions.

3. E. W. Schwartze read a paper on "Gossypol and Cottonseed Meal Poisoning." Mr. Schwartze brought out that great variations in the amount of gossypol was to be found in the seed from various localities. He related experiments showing the toxicity of the poisonous principles of the seed which were extracted directly from the kernels. The toxicity was determined by feeding small animals with known amounts of the toxic material. Dr. Fraps, of the Texas Experiment Station, in the course of

the discussion over the paper, took issue with Dr. Schwartze by calling attention to the fact that Dr. Schwartze's experiments were made with the kernels instead of with the cottonseed meal. He then related numerous instances where cottonseed meal was fed to various kinds of farm animals, which was done with safety providing the proper amount of forage crops was fed at the same time. The paper was also discussed by Dr. J. S. Hughes who stated there was no difficulty in producing the same symptoms in cattle which were fed on corn meal and dried out fodder, as was sometimes observed by feeding cottonseed meal under similar conditions.

4. Dr. E. F. Kohman gave a very interesting paper on the "Non-Oxidizability of Vitamin A in Foods," which showed that with proper preparation foods should not lose any of this valuable constituent by proper methods of cooking.

5. Dr. A. H. Richardson read a paper on the "Hydrogeneration of Cottonseed Oil with Platinum." It was one of a series of similar papers published in *Industrial and Engineering Chemistry*. It possessed a great interest for those present who are interested in this subject.

6. Dr. Louis C. Whiton's paper on "Practical versus the Theoretical Side of Oil Extraction" gave an account of modern European practice, which will be published later in full.

7. Dr. J. S. McHargue from the Kentucky Experiment Station read a very interesting and carefully prepared paper on "The Mineral Constituents of the Cotton Plant." He particularly stressed the presence of copper in various parts of the plant, even though the plants were raised in quite different localities.

8. Dr. R. S. Curtis, of the Raleigh (N. C.) Agricultural Experiment Station, gave a very interesting paper on the "Effect of Cottonseed Meal in the Dairy Ration," and showed as a result of his experiments that cottonseed meal could be fed in very large amounts with a ration containing proper mineral constituents combined with plenty of green fodder such as alfalfa, timothy and silage.

9. Dr. G. E. Holm, G. R. Greenbank and E. F. Deysher gave a very interesting paper on the "Susceptibility of Fats to Autoxidation." They described the apparatus in use in the Dairy Division of the Department of Agriculture at Washington. Fat is exposed under standard conditions in an atmosphere of oxygen at a definite temperature. The apparatus is connected up in such a manner that when the oxygen commences to be rapidly absorbed by the fat a partial vacuum is formed and the change in pressure is recorded on an instrument such as is used for similar purposes in the Weather Bureau. Observations given in the paper show the effect of different treatments on the susceptibility of oils. Very remarkable effects were shown by exposing oils to ultra violet light,

which caused them to absorb oxygen very rapidly. Fats kept in a perfect vacuum remain sweet for very long periods when very slight traces of moisture are present; on the other hand, when absolutely dry they show a tendency to oxidize much more rapidly.

10. Dr. Jos. F. Geisler, of the Experimental Exchange Laboratory, New York City, reported on the "Effect of Cottonseed Feeding on Butter Fat," and compared the results with those obtained with other feeds. He showed as a result of his studies that it was possible for the dairyman to buy varying feed to produce hard or soft butters at will and that any contentions to the effect that hard butters were adulterations were quite ridiculous.

11. Dr. G. S. Fraps, of the Texas Experimental Station, read a paper on the "Feeding Value of Cottonseed Meal." He gave results obtained by using meal for feeding all kinds of farm animals. Attention was called to its use as a chicken feed in comparison with tankage. The evidence seemed to show that it was fully as safe a feed as tankage, providing sufficient mineral matter such as salt or carbon seed was fed along with it. Dr. Fraps considered cottonseed meal one of the best concentrated cattle foods obtainable at the present time. He also called particular attention to the fact that in most of the experiments made in feeding cottonseed meal no account was taken of the quality of the meal fed or its composition, and it is not unlikely that many of the results may have been obtained by feeding damaged meal, as experimenters were not considered meal experts and with them meal was simply meal.

Dr. David Wesson, in his paper on "Cotton as a Food Crop" presented comparative statistics showing that on a fat and protein basis during the last year cotton ranked third among the great food crops of the country. Attention was called to the fact that chemists during the last fifty years have been devoting most of their attention to the development of the oil which has been practically perfected. The residue of the seed, consisting of from fifty to sixty per cent of protein, has been almost entirely neglected. This protein has a high biologic value and if purified by the removal of gossypol and other undesirable materials can be made into a wholesome human food which can be used as a meat substitute. He gave instances where he had made it into very palatable hash and croquettes, but did not however give any indications that people might expect sirloin or porterhouse steaks of cottonseed in the immediate future.