WHAT HAS CHEMISTRY DONE FOR THE COTTON SEED OIL INDUSTRY?

I think it is not too broad a statement to say that the present cotton seed oil indusry owes is existence, its rapid development since birth, and its future progress to the chemist. In the earliest records we find a Dr. George Hunter, a chemist and druggist of Philadelphia, having made experiments with oil taken from cotton seed. Realizing that the oil thus obtained was a valuable product, he moved to New Orleans to engage in the industry, but owing to unfavorable conditions at that time he was not successful. Some thirteen years later a small bottle of oil was exhibited which the owner claimed cost $12,000. After the Civil War a mill was built in South Carolina and another in New Orleans, which marks the beginning of the industry on a commercial basis. Today the mills in the United States number over 900, of which over 800 are in the South, which represents an investment of over one hundred and twenty-five million dollars.

The mills in the United States are called cotton seed oil mills, or "oil mills," for short, owing to the fact that the oil obtained is the most valuable part. Similar mills in Europe are called meal mills, as their meal is more valuable. (This is due to the inferior grade of cotton grown in European countries, which gives a low grade oil.) The early development of the cotton seed oil mills is very interesting to the producer as well as to the manufacturer, but this is past history, and it is more important to consider the present conditions of the industry. The different products that are on the market today that owe their existence to the advancement of chemistry are many. In the museum (Department of Chemistry) we have over twenty-five products that the farmer can easily obtain all made from the seed he raised. The chemist has taken the crude oil that comes from the mill and converted it into a superior quality of cooking oil which has surpassed its old competitor, hog lard. This cooking oil is odorless, tasteless and practically colorless and is produced without the use of any injurious chemicals. One pound of this oil is equal to one and a third pounds of hog lard for cooking purposes. As a salad oil it surpasses olive oil. The United States Board of Official Chemists at Washington has classified it with olive oil without discrimination and it has been shown that it is more digestible than olive oil. The oleomargarine manufactured from cotton oil is far better than the unsanitary butter often placed on the market. In the refining of the crude oil there is a refuse obtained which is commercially called "soap stock." Only a few years ago this soap stock was used only for making the cheapest grade of laundry soap; today it is used for the best grade of toilet soap. The manufacture of miners oil from cotton oil is an important development.

Next to the oil, cotton seed meal is the most important article of the mills. Its best uses are for feeding purposes and fertilizers. While cotton seed meal is one of the best commercial fertilizers produced, it is too valuable to be used extensively for this purpose, as the fertilizer value can be obtained after feeding. The value of the meal for both feeding and fertilizing purposes is determined by chemical analysis.

The lint, which is the short cotton taken from the seed after ginning, is manufactured into quilts, pillows and mattresses. The reader may ask where does chemistry play its part in the above mentioned articles? To be frank, it does not have apart here. Must the chemist be satisfied? No. He has gone to work and the results are he has put on the market silk equal to that produced by the Italy silk worm, artificial hair that is used as a substitute for horse hair, which is used in the manufacture of hats. Hair brushes and clothes brushes are also made, all from the line that the oil mill man takes from his seed.

I must say that the products that are at present on the market were no easy task for the chemist to accomplish. Step by step, year after year, advancements have been made. For many years the crude oil was refined by crude methods of refining, producing an oil which had left an acid flavor, which prevented the oil being used for eatable purposes. A new process of refining enabled the manufacturer to put his oil on the market as an eatable oil, absolutely harmless.

Why should not the Southern agricultural colleges take more interest in oil mill products; making practical experiments and advertising results, for the oil mills have been and are the South's greatest industries? The field for experimentation is unlimited.

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