

CHAPTER III

THE STATISTICS

In the Literature and in the Discussion, we have taken up those factors which have had their influence on the history and the development of the Louisiana Sugar Industry. We have pointed out the ones which we believe to have been of most importance, either for good or bad in the development. Now in order that we may see more clearly what effect these factors have had we present Statistics. The following table shows the annual yield in short tons of sugar. The graph is a moving five-year average of this annual yield of short tons of sugar centered on the middle year of the five. It would have been extremely interesting to have had the yields of cane per acre, and the prices of sugar per pound throughout the period, but the statistics for such are not to be had. Even the tons of sugar per annum had to be pieced together from a number of sources, and prior to 1911 there are many contradictions to be found in the stated yields for some years. While it is regrettable that more reliable data could not be had for the earlier years, it is believed that the data is reliable enough to serve on the average, as a guide to what happened.

STATEMENT OF LOUISIANA SUGAR PRODUCTION
FROM 1815 to 1932 INCLUSIVE

Year	Sugar in Short Tons	Yield of Cane Per Acre	Note
1815	5,006		
1816	7,493		
1818	12,499		
1823	17,249		
1824	13,223		
1825	17,249		
1826	25,873		
1827	40,824		
1828	50,599		
1829	27,599		
1830	42,700		Vacuum Pan
1831	42,000		
1832	40,243		
1833	41,980		
1834	57,500		
1835	17,249		
1836	40,249		
1837	32,396		
1838	40,240		
1839	66,135		
1840	49,353		Use of Coal
1841	51,808		
1842	80,502		
1843	57,508		
1844	114,999		Effects
1845	159,849		
1846	79,514		
1847	138,000		Six Roller Mill
1848	126,520		
1849	134,921		
1850	115,484		
1851	129,021		
1852	184,029		Centrifugal
1853	251,122		Bagasse Burner
1854	198,631		Guano
1855	123,303		
1856	41,231		Canes rotting
1857	154,047		
1858	207,431		
1859	127,019		
1860	131,522		
1861	264,159		
1862	48,420		
1863	44,452		
1864	5,971		
1865	10,401		

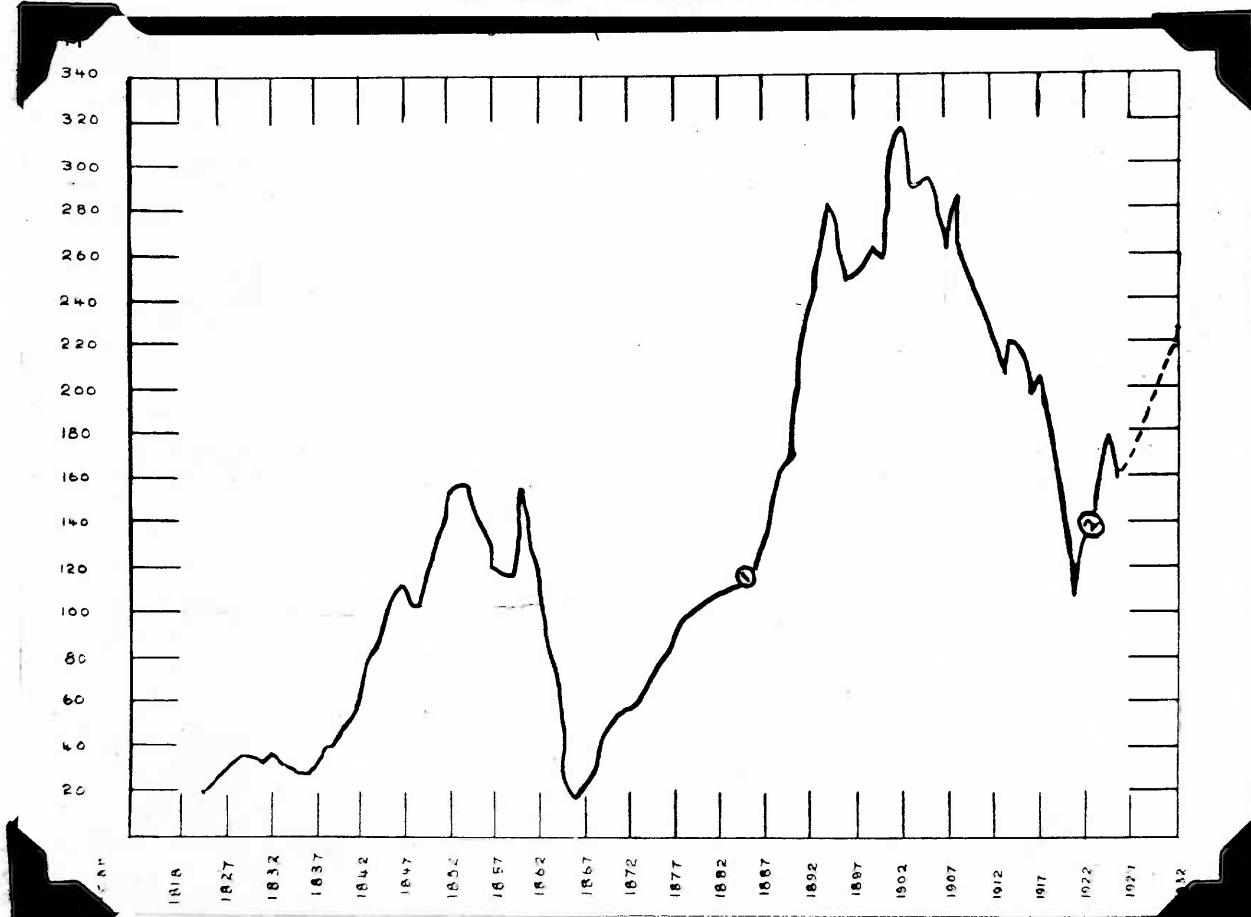
Year	Sugar in Short Tons	Yield of Cane Per Acre	Note
1913	292,697	17	
1914	242,700	15	
1915	137,500	11	
1916	303,899	18	
1917	243,599	15.6	
1918	280,898	18	Mosaic
1919	120,999	10.5	
1920	169,115	13.6	
1921	324,429	18.5	
1922	295,095	15.6	
1923	162,023	11.1	
1924	88,000	7.6	Severe Drought
1925	198,000	14.6	
1926	47,000	6.8	
1927	78,000	13.4	
1928	115,000	16.2	
1929	199,609	18.8	
1930	183,693	17.1	
1931	156,617	15.1	
1932	222,760	15.5	

SUGAR PRODUCTION IN LOUISIANA

GRAPH

SHOWING A MOVING FIVE YEAR AVERAGE IN
SHORT TONS OF SUGAR PER ANNUM

CENTERED ON MIDDLE YEAR



(1) Establishment of Louisiana Sugar Experiment Station by the Sugar Planters

(2) Special Appropriation for Investigation of Sugar Cane Problems.

Note: For further analysis of graph, see pages 124-125

Depressions

Three times the industry has been nearly wiped out. The first was in its very infancy and was caused by the transfer of the Louisiana Territory from France to Spain. The second was the effect of the Civil War and Reconstruction. The third was the great decline which started about 1906, was accelerated by the Underwood Free Sugar Bill, and precipitated by the complication of diseases, including root rot, red rot, and mosaic. The recovery from two of these declines was clearly due to investigational work done by the Louisiana Sugar Experiment Station, the United States Department of Agriculture, and the private individual. It is true that the sugar business had already started on the upward swing before the establishment of the Sugar Experiment Station, and for that the planters owed thanks to such men as Kenner, Pugh, Rost, McCall, Cage, Thompson, Pharr, Dymond, Minor and others who spent their money, made their discoveries and gave of their knowledge to their fellowmen. A glance at the chart will show that while these gentlemen were making progress, their success was not nearly so rapid nor so regular as that made between 1885 and 1895. The rapid upward swing in that period was due to the work of the Sugar Experiment Station. The chief factors responsible for this greatly increased production of sugar were its recommendations regarding the width of rows, application of fertilizers, rotation, and cultivation of the cane. During the second great decline, the Sugar Experiment Station was poorly financed, and in fact at the time,

1913 through 1920, when it should have been most active, it was struggling for existence on a reduced budget, and having to meet the high costs of the war and after-war prices. Again, the industry was nearly ruined before the planters felt the necessity for scientific work sufficiently to get behind the Experiment Station, and to secure the aid of the United States Department of Agriculture. The introduction of new varieties, the breeding of varieties especially adapted to Louisiana soil and climate, the introduction of the soy-bean, the improvement of the cultural methods, the study of diseases and the development of means for combatting the cane borer have been responsible for the rapid progress since 1922.

A popular opinion grew up, and to some extent still prevails, that the great decline in production which resulted in all but total disaster in the years 1924-26 was due totally to invasions of new diseases. There is no doubt at all that diseases did play a most important part in the condition of that time. However, if we examine the table and the chart just given we cannot but see that the downward tendency started as far back as 1906 and was well underway in 1911. Red rot was not known before 1908, and mosaic until 1919, and since these two diseases are known to be the most severe yet to get a foothold in the Louisiana cane fields, we must look further for the cause which precipitated this decline. I. H. Morse, speaking in Article 72, gives logical reasons as explanation for the beginning of this disaster. The consolidation of mills, and the loss of

a direct market for the product of the sugar house, the unforeseen increases in costs of the business, which was followed as is usual in such cases by retrenchment policies, not always wise, had much to do with preparing the way for the invading diseases. The Underwood Free Sugar Bill killed confidence, and the high price of sugar during and just after the World War, as has already been said, caused the planters to follow human instinct by milling the good cane and planting the diseased. All of these things had a part in so weakening the cane that it fell an easy victim to mosaic and its allies, red rot and the root rot complex.

Major Changes

Four times have the planters felt the need for and been successful in making major changes in their varieties of sugar cane. The first of these was about 1830 when the Creole cane failed and was succeeded by the Louisiana Purple and Striped cane. The second was in 1893 when the Demarara 74 and 95 canes were introduced. The third was the introduction of the P.O.J. canes during the years 1922 and 1923. The fourth, and last was the introduction of the Coimbatoir and Canal Point seedling canes to the plantations in 1931. Two of these changes, that of 1830 and 1922, were of major importance and each had much to do with the continuance of the sugar industry. The others were for the betterment of the industry, but cannot be said to have filled a gap in a crisis.

Other Effort

Four other times the industry was distressed to such an extent that planters bestirred themselves to action. During the term of office of Governor Roman, he and Mr. Lapice felt the call and had the Federal Government to introduce for them certain varieties of cane from India. These proved unable to stand the rigors of the Louisiana winters. Just prior to 1856 the yields of cane began to go downward at a rapid rate and the planters thought the seed had run out. In that year they induced Congress to appropriate \$10,000 to finance an expedition in search of better canes. Two battle ships were sent out and brought back canes, but none of them were fit for planting and the expedition was a failure. If we study the literature, we are convinced that the trouble at that time was due to a series of unusually cold wet winters followed by late spring weather, a condition which we have afterward learned is disasterous. The weather became normal, and the cane regained its place in the cropping system of the State. In the years just prior to 1872, a condition similar to that which is just described again came about, and the planters of that day concluded that their canes had run out. They took up a collection and sent Mr. Lapice to Asia to find better canes for them. The Lapice cane, which was grown in this State for many years, was the result of the effort. Again, the weather became normal and the Old Purple and Striped canes continued to produce pro-

fitable crops. The violent fluctuations in production from 1895 to 1906 were alarming, and while the difference here was clearly due to an unstable governmental policy regarding tariff, the planters induced the Experiment Station to employ a plant pathologist for the purpose of studying cane diseases. Dr. C. W. Edgerton, who became the head of the Department of Plant Pathology in 1908, found that there was the disease known as red rot affecting the canes in the year 1909. Later the department worked up much information on the so-called root rot complex, and in 1919 the mosaic disease was found here. No specific cure for any of the cane diseases occurring in Louisiana has been found, and all effective effort to combat them has been directed at securing varieties of cane which were either immune or resistant to the attack of the diseases. In this work the pathologist has rendered service. The planter now knows that certain varieties are capable of withstanding the diseases, and that others are susceptible. The stronger varieties are being planted in preference to the susceptible, and through this means disease is becoming less of a threat than it once was.

Other Factors

There are factors other than agronomic which have played important parts in the history and development of the Sugar Industry. It is well to record the most important of them here, in order that we may have a clearer understanding

of the past. The first of these which we wish to mention is the introduction of the steam engine. Up to 1825 only horse-power mills were in use, and the introduction of the steam engine gave a great impetus to the manufacture of sugar, for as said by Rost, "In less than twenty years after, the crop of the state jumped to nearly 250,000 tons". This was nearly half of the sugar which was consumed in the country. In 1830 the Vacuum Pan for boiling sugar was used. Through its use a greater yield of sugar was produced, but better grades of sugar at less cost was secured. In 1840, coal was used as a fuel in the sugar houses. In 1844 the Multiple Effect was introduced. Through the use of this form of evaporator, a great economy in steam was effected, and this date marks a sharp upturn in the sugar production in the State. In 1847 came the first six-roller mills, and this date is the beginning of the central factory. In 1853, the first centrifugal was introduced, and this machine like the Pan and the Effects, enabled the planter to turn out better grades of sugar and greater quantities. The last of this series of innovations consisted in the introduction of the Bagasse Burner which was introduced in 1853. The Bagasse Burner enabled the sugar house owner to find a use for a troublesome by-product and at the same time cut his fuel bill very materially.

Other Factors

DECLINES:

1766 Transfer of the Louisiana Territory from France to Spain

1861-7 Effect of Civil War

1909 Discovery of Red Rot

1919 Discovery of Mosaic

1924-27 The great Decline Culminating in Disaster

INFLUENCES OF INVESTIGATION:

1872-1885 Investigation by the Sugar Planters

1885 Establishment of the Louisiana Sugar Experiment Station

1924 The Louisiana Sugar Experiment Station and the Office of Sugar Investigation, U.S.D.A., Supported by the Louisiana Sugar Planters.

CHANGES IN VARIETIES OF SUGAR CANE:

1832 From Creole to Louisiana Purple and Striped

1893 Introduction of Demarara 74 and 95

1922-3 Introduction of P.O.J. canes

1931 Introduction of Coimbatoir and Canal Point Seedlings to the Plantations

FALSE ALARMS:

1831-35 Governor Roman Introduced Canes from India

1856 First Federal Appropriation to introduce new canes

1872 Lapice expedition to India

MECHANICAL FACTORS:

- 1825 Introduction of Steam Engine
- 1830 Introduction of Vacuum Pan
- 1840 Introduction of Coal
- 1844 Introduction of Multiple Effects
- 1847 Introduction of Six Roller Mill
- 1852 Introduction of Centrifugal
- 1853 Introduction of Bagasse Burners

LEGAL FACTORS:

- 1894 Bounty Repeal
- 1897 Duty Restored to 1.95
- 1913 Underwood Free Sugar Bill
- 1921 Emergency Tariff Bill

CONCLUSIONS

The Sugar Industry of Louisiana was founded on an introduced plant grown on virgin soil.

The Sugar Industry, from its beginning, has been dependent on the results of investigation for its very existence.

The first investigators of sugar problems were found among the sugar planters themselves.

These men, though able in their time, lacked that training which would have enabled them to solve their most pressing problems.

The second set of investigators were furnished by the Louisiana Sugar Experiment Station, and later by the United States Department of Agriculture.

It was from the work of these men that the Sugar Industry prospered.

The sugar planter as a whole had not always appreciated the work done for them by the investigators.

At times it has required the urge of grim necessity to bring the planter to the use of scientific information.

The development of the sugar industry is bound up with the results of investigation. As the planter has taken advantage of it, so has he prospered. As he failed to heed the best advice of the investigator, so has his business suffered.

The sugar planters of today are heartily supporting the investigational work both at the Louisiana Sugar Experiment Station, and that done by the Office of Sugar Investigation, United States Department of Agriculture. The upward swing in sugar production is due to this cooperation.

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BIOGRAPHY

William Gilbert Taggart was born at Latimer, South Carolina, September 17, 1883. His primary education was received in the private and public schools of that State, and in Mississippi. He graduated from the Scooba High School, Scooba, Mississippi, in June 1903.

In September, 1903, he entered the Mississippi Agricultural and Mechanical College, graduating from that institution in June 1906, with the Degree of Bachelor of Science.

In September 1906, he was employed by the Mississippi State Laboratory as Assistant Chemist. He resigned that position in October of the same year to accept a similar position at the Louisiana State University.

On October 10, 1906, he reported for work in Baton Rouge. He was transferred to the Louisiana Sugar Experiment Station in New Orleans as Assistant Research Chemist in December 1908. He was promoted to Assistant Director of the Sugar Experiment Station in 1913. He was promoted to Assistant Director of the Louisiana Experiment Stations, and transferred to Baton Rouge in 1924. That position he still holds.