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A HISTORY OF THE TEXAS SUGAR CANE INDUSTRY
WITH SPECIAL REFERENCE TO BRAZORIA COUNTY

by

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ABSTRACT

A HISTORY OF THE TEXAS SUGAR CANE INDUSTRY
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Sugar cane was a well-known crop to planters in the Texas counties of Brazoria, Fort Bend, Matagorda, and Wharton. Introduced during the 1820's, sugar cane appealed to countless planters. For a crop that demanded large amounts of capital and labor, sugar spread rapidly. Planters through trial and error perfected the processes of cultivation and manufacturing. By planning, Texas sugar growers eliminated the obstacles of markets, transportation, and credit. By 1850, sugar was well established as an important staple of Texas.

The decade of the fifties witnessed the gradual decline of the Texas sugar industry. Deflated prices reduced profits while bad weather reduced output. Natural disaster struck seven times during the decade. Planters eager to regain losses abandoned sugar for cotton.

The Civil War nearly obliterated the Texas cane industry. Wartime conditions prevented profitable marketing of the crop, and emancipation produced a chronic shortage of labor. Although yields were low and profits nonexistent, the industry managed to survive the postwar period.
The sugar industry of the 1880's established itself along new lines. The old plantations were incorporated into large business establishments, while the Negro laborer was replaced by the convict. Incorporation and the convict labor system stimulated renewed interest and growth in the industry. The State of Texas became one of the largest producers of cane during this period.

Despite these developments, the sugar cane industry failed in Texas. Capital and labor played a key role in its disintegration, but in the final analysis weather was the most decisive cause of failure.
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PREFACE

During the eighteenth and nineteenth centuries, the South grasped new and exotic agricultural crops in hopes of finding a staple comparable to cotton and in anticipation of immediate and substantial profits. Some of these crops failed at the start while others produced lingering hopes of great wealth. With the exception of its lasting success in Louisiana, sugar was a crop that flourished and then withered in the Southern States.

In Texas, for example, sugar held the imagination and hopes of countless planters in the counties of Brazoria, Fort Bend, Matagorda and Wharton. It is the purpose of this thesis to trace the Texas cane industry from its inception during the 1820's to its dissolution in the 1920's, a century characterized by ambitious efforts, meager successes, and discouraging failures. As Brazoria County was the largest producing area of sugar throughout this one hundred year period, the Texas industry is reviewed with focus on this county.

The writer wishes to express sincere appreciation to all those who gave so generously of their time and knowledge. To the late Andrew Forest Muir, I am indebted for the idea of this study while also for the initial guidance in research.
and organization. To Dr. Frank Vandiver I am grateful for allowing me travel expenses to complete my research at the University of Texas in Austin, and also for agreeing to direct and supervise the completion of this thesis. And finally to my husband and children, who not only prodded and encouraged but who by their patience and understanding provided the necessary support and confidence to see this thesis to its successful conclusion, I am forever indebted.
CHAPTER I

INCEPTION AND EARLY DEVELOPMENT

From the old world to the new, the sugar cane culture eventually reached Texas. After its introduction sugar production in Texas remained at the experimental level until the 1840's. Reduced cotton yields, depressed cotton prices, protective sugar duties, and exaggerated sugar claims all served to stimulate interest and involvement in sugar production. By 1850 Texas cane producers had overcome the problems of markets, transportation, and capital to establish sugar cane as an important staple in south Texas.

The ancient beginnings of sugar cane are enveloped in folklore and tradition. Chroniclers of old maintained that sugar was created by a celebrated magician at the request of a famous Rahaj of India. Whatever the crop's actual origin, it is recorded that crude sugar was being made as early as 766 B.C. in China. Sugar culture followed the lines of conquest and expansion and was eventually introduced along the eastern Mediterranean coast. Although some evidence exists to indicate scattered knowledge of sugar growing in southern Europe, the returning Crusaders, bearing samples of this sweet staple, stimulated a demand
for this crop's importation and resulting cultivation. Europeans, in turn, transferred the sugar growing process to their colonies, with Columbus introducing the crop in Hispaniola in 1506. The Santo Domingo sugar culture spread rapidly throughout South America and the West Indies.

In America, early sugar experimentation centered in the Southern States. After the Concord, arriving from Bermuda, brought "two chests of rare plants and seeds, including...'sugar cane'", colonists in Virginia and Maryland engaged unsuccessfully in sugar growing around 1621. South Carolinians initially thought the crop suitable for cultivation in their area, but after the damagingly cold weather of the winter of 1671-72, these pioneers abandoned sugar production. Florida also experimented with cane during the crop's early debut in America. Lieutenant Governor John Moultrie succeeded in growing sugar cane on his plantation in 1770, and his initial success encouraged other planters to do the same. Discouragingly low yields were the results of subsequent efforts, as the Florida planters discovered that the northwest winds injured and prevented the cane from reaching maturity.

Sugar experiments in the southern state of Louisiana were eventually most successful. Despite the French ministry's opinion that all sugar growing would end in disaster, Jesuit fathers from Santo Domingo introduced sugar on their plantation in 1751. Although cane was successfully grown
to maturity, all attempts at granulation failed. For almost five decades sugar in Louisiana had no commercial value; planters grew small patches of cane solely for chewing and "for making syrup and tafia". Sugar was first profitably manufactured in 1795. Insect destruction of the indigo plant that year prompted Etienne de Bore, an important planter in southern Louisiana, to attempt commercial sugar production. De Bore imported a sugar maker to supervise cultivation and manufacture, devoted a plantation of thirty Negroes to sugar production, erected a horse-drawn mill, and persisted until he succeeded in profitably crystallizing sugar for sale. The results of this crop reportedly brought de Bore $12,000.

Neighboring planters who had eagerly watched de Bore's experiment were encouraged by his success to devote limited acreage to sugar cane. Reoccurring low indigo prices along with the much rumored reported of the profits to be made in sugar induced other Louisianian planters to undertake the cultivation of sugar. The arrival of immigrants from Santo Domingo, well acquainted with the sugar manufacturing process, also boosted the incipient industry. By 1801 seventy-five planters were actively engaged in sugar production, and the industry was well established in Louisiana.

The actual origins of the Texas sugar industry are in doubt. It can be assumed, however, that when the schooner
Lively carrying men and supplies from New Orleans landed at the mouth of the Brazos River in December, 1821, knowledge of the sugar cane culture arrived as well. These first Texas families migrating from other southern states were undoubtedly aware of the much publicized financial potential of cane. Possibly, some of these early immigrants came to Texas with intentions of planting cane in the rich soil of the Brazos River area.

As early as 1822, subsistence farmers in the vicinity of San Antonio de Bexar were raising sugar cane for home use. The result of their efforts was syrup or peloncus. By the end of the decade several planters in southwest Texas were experimenting with sugar. Reports of these early attempts were both enthusiastic and exaggerated. J. C. Clopper, an early traveler to Texas, predicted that the area along the Brazos River would produce enough sugar to supply both Stephen F. Austin's and Green De Witt's colonies in 1828. "There are several planters already engaged in erecting sugar mills," he recorded, "and they have resolved to dispose of it at 10cts..., this is cheaper that it can be sold by purchasers and shippers from New Orleans." Austin wrote optimistically in August, 1828 that the settlers were beginning to reap the "fruits of their labor". He was confident that eighty hogsheads of sugar would be made that season.

Although both Clopper's and Austin's accounts indicate
that sugar was being produced in sufficient quantities to sell or export, there is every reason to doubt that this early sugar was commercially valuable or the result of extensive cultivation. The Texas Gazette looked more realistically at these early sugar efforts when it admitted that sugar was still in the experimental stage. Only one hundred acres in Texas were planted with sugar cane in 1829, and the inexperience of the Texas planters contributed to both a loss in quantity and quality of the manufactured product. The 1828 and 1829 crops yielded a little over a sugar hogshead per acre while the finished product was, in reality, little more than crystallized molasses.

Experimentation with cane continued during the next decade. Despite the disruptive effects of the cholera epidemic of 1833 and the Texas Revolution, advances were made during the 1830's. Judge Samuel Williams on the Trinity River, Eli Mercer on the Colorado River, Martin Varner on Varner Creek, and William Stafford on Oyster Creek all made noteworthy contributions to the expanding Texas cane culture. Judge Williams by 1832 had convinced other planters that good sugar could be grown on last year's stubbles. He produced a good crop on three year old ratoons nearly equal in length to that of his first year crop. This discovery increased profits since new cane, which previously had been reserved for seed, could now be processed into a profitable product.
The results of both Martin Varner's and Eli Mercer's efforts at sugar production enhanced the attractiveness of the staple to prospective planters. Martin Varner and his partner, Israel Waters, successfully manufactured rum by distilling molasses. A marketable product was thus made from the natural by-product of sugar. Austin acknowledged receipt of a bottle of this rum and gave these two men credit for making the first "ardent spirits" in the colony. Eli Mercer by constructing an effective, but inexpensive sugar mill facilitated the manufacturing process of cane. His apparatus consisted of a rolling live oak which pressed out the juice as it was drawn across the cane. Although primitive, Mercer's mill produced enough sugar in 1832 to supply the "whole population of Egypt [an early Texas community] with sweetening."

It was William Stafford, however, who built the first permanent sugar mill in Texas in 1834. Having immigrated from Louisiana in 1822, Stafford planted and harvested the first sugar in Fort Bend County. This sugar was apparently of poor quality, for as Mrs. Dilue Harris, a nearby neighbor of Stafford's, recalled:

The sugar was as black as tar. It had to carried in a bucket. Father went to Mr. Stafford's to see a sick Negro, and mother gave him a bag to get sugar. He was going in his everyday clothes, but mother would have him put on his best suit, and when he got back he was holding the bag at arms length, his clothing covered with molasses. Mother hung up the bag with a bucket underneath and we then had sugar and molasses.
Stafford's efforts at sugar making were shortlived; Mexican invaders during the Texas Revolution burned his cane mill to the ground.

Interest in sugar production increased during the early years of the 1840's. Despite the problems of markets, transportation, and capital, the decade of the forties witnessed an impressive expansion of the Texas sugar culture. Several factors served to stimulate interest in this relatively new staple. First, cotton planters suffered disastrous seasons from 1840 to 1844. Worms and wet weather drastically reduced cotton yields and profits. Cotton prices in the same four year period dropped to ruinous lows. Abandonment of cotton production appeared as the only recourse opened to depressed planters. As the Brazos Courier bluntly reviewed the situation:

The cotton crops have sustained serious injury from the ravages of worms. Like a swarm of locusts they have overrun some of our best farms. Many of our planters will make but half a crop. No remedy can be found for them but the abandonment of cotton growing....

A second reason for increased sugar production during the early forties was tariff protection. The Legislature of the Texas Republic repeatedly levied discriminatory duties on imported sugar and molasses. At a time when cotton prices were falling, these protective duties on sugar were an attractive incentive to cotton planters to shift their fields to sugar cane.
Not the least of the reasons for the increased interest and engagement in sugar production during the 1840's were the numerous, often exaggerated, reports of the great potential and alleged superiority of the Texas sugar cane industry. Disillusioned and financially depressed cotton planters listened attentively as local newspapers and chroniclers told of the unquestionably superior cane lands of Texas. Such reports always emphasized the immediate success and profits which awaited the planter who adopted cane culture. The soil and climate of Texas were ideal for profitable cane cultivation.

Travelers to Texas all agreed that the best sugar cane lands were located in the "lower country" along the flat, alluvial river bottoms which extended inland from the Gulf around seventy miles. These lands, drained by the silt-bearing Brazos River, San Bernard River, Colorado River, Caney Creek and Oyster Creek, were without equal as to fertility. Texas soil when compared with that of Louisiana was described as "better tempered". It consisted of a "deep vegetable mound" and was mixed with enough loam and sand to allow rapid and thorough drainage - an important feature of good cane lands. In addition, Texas lands offered planters a better investment; appreciation was expected to reach 100 per cent in three to five years.

Writers enthusiastically listed the climatic advan-
tages that Texas offered sugar growers. Ideal conditions for sugar production - a temperature of around 75 degrees Fahrenheit all year round with considerable sunshine and no freezes - were all met in Texas. A comparison of Louisiana's climate established for the planters that the climate of Texas was milder, the seasons dryer and warmer. One writer, in fact, asserted "the great bugbear, a norther, so much talked of in Texas, is on chemical principles felt more by our nerves than shown by the thermometer." Prospective planters were also assured that destructive tornados "scarcey ever" invaded Texas. The coastal winds, moreover, rarely damaged the cane.

The Texas sugar area was even judged healthier. Jacob De Cordova, an early commentator of Texas, claimed that Negroes multiplied faster and lived longer in the cane regions. He wrote that even though "the labor on sugar estates is far heavier than that of any other agricultural pursuit, the operatives enjoy better health and live longer than the average."

In addition to the ideal climatic conditions of Texas, the cane itself was judged potentially superior to that grown in Louisiana. Texas writers advertised that two hogsheads per acre were average on most coastal sugar estates. Because of the longer growing season, Texas cane grew wider and taller and sweetened high up on the stalk.
Some chroniclers thought Texas sugar "dry enough to box", the ultimate compliment.

These natural advantages of Texas convinced many that if sugar was extensively cultivated, great monetary rewards would result. As one of the early emigrant's guides indicated:

Those who shall see to turn their exertions to the making of sugar and rum will find their recompense by an unlimited quantity, as it were, of returns to the capital and soil employed; and that too, both as to flavor and quality, if not superior, yet equal to the West Indian productions of the same kind and name.

Success was envisioned for the Texas sugar industry. Of all these contemporary writers, only one foresaw failure. Writing in 1845, Charles Elliot, the British Ministry's representative in Texas, predicted that if "there should ever be any attempt to grow sugar on an extensive scale in Texas, the result would be disastrous to the parties concerned."

The shift to sugar was, at first, noticeably slow with newspapers carrying an occasional statistic or a brief encouraging remark. The Texian of Austin reported that in the Caney Creek and Colorado River areas two planters harvested a total of seventy-eight hogsheads. In the same area the number of hogsheads produced increased to one hundred in 1842. No accurate estimate can be made of the amount of sugar being produced elsewhere in Texas since
the government of the Republic left few pertinent statistical records.

The Texas industry received a tremendous boost in 1843 when planters adopted steam power to drive their mills. That year Captain William Duncan erected the first steam sugar mill on his Caney Creek plantation. Enthusiasm for sugar mounted as planters realized greater output with these new mills. John Sweeney on the San Bernard River in Brazoria County harvested one hundred hogsheads of sugar, the quality of which was judged to be "equal to the best" and "far superior to the quantities usually imported from New Orleans." The Houston Telegraph and Texas Register predicted that the 1843 sugar crop would supply all the families along the Brazos River. Within five years it was believed that Texas could be producing sufficient quantities of sugar and molasses to satisfy the entire domestic population.

As sugar captured the imagination of more and more planters, there was a determined effort to make sugar an exportable crop. It was common knowledge that Texas cane would produce substantial profits if an adequate market could be found. The Brazos River sugar planters looked to the United States as such a market, and consequently, they were among the strongest advocates of annexation as an acceptable means to guarantee themselves profitable
markets for their sugar.

In establishing sugar as profitable, important regional staple, Texas planters had more to consider than just finding markets. Transportation had early proved itself a problem. Since sugar could not bear long distance travel by land, several attempts were made to make the area's waterways useful. An attempt by the Caney Navigation Company to clear out a channel on Caney Creek ended in failure. Although Texas claimed that one-third of its sugar growing area could use the Brazos River, the San Bernard River, the Colorado River and Oyster Creek as navigable waterways to move the cane, planters early realized the necessity of railroads. By 1846 the ordinary water transports could not be expected to handle the increasing output of the "Sugar Bowl" area.

During the Republic years three companies were chartered to construct and operate railroads in the Brazos Valley region. These three lines were planned to facilitate the export trade of this area. The Texas Railroad Navigation and Banking Company and the Brazos and Galveston Railroad Company, both of which made abortive construction attempts, were chartered to ease the problem of transporting marketable surplus products to Galveston. The third railroad line was planned, organized, and largely financed by the sugar planters of Brazoria County. When completed
in the late fifties, the Houston Tap and Brazoria Railroad carried surplus sugar and molasses to the Houston market.

Despite the planters' efforts to assure themselves an exportable crop, real exports were meager. Texas sugar was exported for the first time in 1846. That year "Sugar Bowl" planters sent fifty hogsheads of sugar to the Galveston market after distributing an unknown amount to local merchants and neighbors. Of the 2,000 hogsheads harvested in 1847, 600 hogsheads were exported. In comparison, 1848 was a poor year. The hurricane of that year decidedly reduced the sugar crop. Planters were forced to reserve a substantial portion of their yields for seed. The demand for Texas sugar increased that year. P. J. Cadue, a factor employed by Judge Samuel Williams, reported:

I have sold the molasses...and the sugar is wanted and be disposed of here to better advantages than in New York or Philadelphia. I hope you may be able to send some Texas sugar and molasses... as they are represented as being a good article and are of ready sale."

Sugar production besides demanding accessible markets and adequate transportation also required large capital outlays. Finances were another problem the Texas planters had to overcome to establish sugar as an important staple. The average value of a Brazos Valley sugar plantation including machinery, buildings, and a minimum labor force of fifty Negroes (at a medium cost of $500 per head) was
$50,000. A few of the Brazoria County plantations were valued at $250,000. Credit solved the problem of insufficient capital and established itself as an intricate part of the expanding coastal sugar industry.

Prospective and established planters frequently incurred massive debts to expand operations, purchase new equipment, defray marketing expenses, and in short, establish themselves as productive sugar manufacturers. The desire to increase sugar acreage or the necessity of replacing outdated equipment outweighed the hazards of mortgaging plantations and crops. Factors, banks, and local merchants served as creditors to most of the Texas sugar planters. The business houses of McKinney and Williams, Smith and Adriance, Patrick McGreal, and especially, Robert and David Mills virtually controlled the assets of Brazoria County. More important, these individuals and firms also held the majority of the plantation mortgages. John Sweeney, one of the early leaders of the Texas sugar movement, for example, increased his land acreage during the forties by approximately 5,600 acres. To finance this purchase, he borrowed $46,716.26 from the Mills brothers, mortgaging his land and slaves. He also consigned the cotton crops of 1840, 1841, 1842, and 1843 to his creditors. At his death in 1855, Sweeney's land was partitioned and sold to satisfy the claims against the estate.

Despite the fact that many of the Texas sugar
plantations were established on the precarious basis of credit and mortgages, individual plantation owners were known specifically for their sugar holdings. Abner Jackson, owner of Retrieve, Lake Jackson and Darrington Plantations, James T. Perry, owner of Peach Point Plantations, Morgan Smith, owner of Waldeck Plantation, and the McNeel brothers, owners of Ellersly, Pleasant Grove and the Pleasant McNeel Plantations all had substantial investments in their plantations and equipment. Abner Jackson's three plantations containing more than 12,360 acres were valued at nearly $314,000. Peach Point Plantation boasted a modern, new sugar mill in 1849, and the McNeels in the same year realized $48,000 in profits from 1,200 acres of cane. But of all the sugar plantations in Texas, Morgan Smith's Waldeck was unrivaled as to beauty, machinery, and output.

Colonel Morgan L. Smith, a New Englander, came to Brazoria County in 1838. There he engaged in the mercantile business with John Adriance. For six years Adriance and Smith jointly owned Waldeck Plantation; but in 1847 Smith bought Adriance's quarter interest in the plantation for $24,800.50. Smith gradually made Waldeck one of the finest sugar establishments in the South. Composed of some 1,500 choice acres on the Brazos River, the plantation was known for its elegant mansion, magnificent parks, and advanced sugar equipment. Smith erected one of the largest sugar mills in Texas, described by Abner Strobel, as an immense
brick structure resembling more a "tessellated castle" than a building for making sugar. In 1849 Smith expanded his sugar operations by adding $30,000 worth of machinery to be used in the manufacture and refining of sugar. De Bow estimated Smith's investment in sugar at $114,000 with annual profits of $70,000.

By 1849 sugar had proved itself a "sure crop" to Texas planters. The crop "not liable to the irregularities of the seasons nor the destructive ravages of the worm" had established itself as a major staple in southwest Texas. After twenty-five years of slow, by steady progress, sugar production was no longer experimental. Advanced technology and steam power had modernized the industry. The problems of markets, transportation and capital, which had once plagued the industry, were now solved to a certain extent. Certain factors had helped to stimulate interest in sugar during this twenty-five development period. Tariff protection, sugar propaganda, and reduced cotton crops had attracted planters to sugar.

The Texas sugar industry was on firm footing by 1849, producing 7,351 hogsheads of sugar and 441,918 gallons of molasses. Brazoria County had taken the lead in the state's production of sugar; planters of this county manufactured 4,811 hogsheads of sugar and 314,164 gallons of molasses. Louisianians first took notice of the Texas industry in 1849 when P. A. Champonier, publisher of the annual Statement
of the Sugar Crop in Louisiana, listed Texas cane statistics.

After the rapid expansion of the forties, the future of the Texas sugar industry looked optimistic. Everyone viewed the fifties as years of increasing expansion and success. That Texas would one day compete with Louisiana in output was common knowledge. No one anticipated the effect the weather would have on the growth of the Texas cane industry.
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The decade of the fifties has frequently been viewed as a period of impressive development, expansion, and stabilization of the American sugar industry. Cultivation and manufacturing processes, although differing to a small degree according to individual planters and seasonal circumstances, became standardized. Transportation, marketing and credit, all considered problems in the previous years, were no longer major obstacles within the industry. Years of experience and planning had produced solutions to these difficulties. The steady growth of the industry exhibited nationally during the ante-bellum period was not duplicated in Texas. Contrary to the assumption that the Civil War obliterated the Texas cane culture, an analysis reveals that the industry reached peak development in 1852 and was already in steady decline when the war began. Natural disasters, to which planters thought Texas immune, made successive appearances during the decade. Output and profits were drastically reduced; expansion of the industry halted. The rains, droughts, hurricanes, and frosts had practically destroyed the industry by 1860. The Civil War merely
prevented its resurgence.

Even in Texas, cane culture had reached a sophisticated level of development by the late antebellum period. Successful methods and techniques of cultivation and manufacture were well known by 1850. Veteran planters through trial and error had learned and perfected the sugar process, while new planters had availed themselves of the various manuals and guides describing these important procedures. *De Bow's Review* and *Harper's Weekly* both carried long, informative articles on the best methods of soil preparation, planting, cultivation, harvesting and grinding. Probably more than a few planters were also acquainted with W. J. Evans' *Sugar Planter's Manual: Being A Treatise on the Art of Obtaining Sugar From the Sugar-Cane*.

Texas planters had by 1850 adopted ribbon cane as the variety most suited for the area. It gradually replaced the Creole variety (the type used by de Bore in his 1795 experiments) as planters introduced steam-powered mills on their plantations. Unlike the Creole cane, which was more susceptible to injury from cold temperatures, the ribbon cane variety grew larger, matured earlier, and resisted frost better. When processed in steam sugar mills, ribbon cane also produced a larger quantity of sugar.

Sugar production was a year-round operation. Planting
began immediately after the grinding season closed, usually in January. After the ground had been cleared of trash, pulverized, and furrowed, planting was a relatively simple process. Seed cane (sugar cane cuttings or stalks of the previous year) was laid in parallel rows and covered with loose dirt. As Colonel Jonathan Waters of Fort Bend County described it:

Cane is planted by first having a single stalk in the furrow...and then another stalk is laid so as to lap the length of the first, and so on throughout. Care should be used in laying the stalks of cane, so that all the butts may point in one direction. Hands follow immediately after the cane droppers, with sharp knives, and cut each stalk into three pieces.... Follow immediately after the cane is cut... and cover it from four to six inches deep, with large turning ploughs.\(^3\)

Cane planting and ploughing were the dominant plantation activities from January through March.

Cultivation began as soon as the young cane shoots appeared above the ground, usually in late March. Cultivation consisted of hoeing and surface ploughing. Frequent hoeing was employed to keep the cane fields free of grass and weeds, while surface ploughing loosened the caked dirt around the young cane roots to accelerate growth.

October opened the grinding season, but the intervening months of July through September were busy ones as well. This three month period was devoted to preparations
for harvesting. The labor force was employed at various tasks including the repairing of sugar buildings and equipment and the resetting of sugar kettles. The plantation coopers constructed the hogsheads and barrels during this time. The most important and time consuming task, however, was preparing enough wood to keep the mill furnaces operating continuously throughout the grinding period. The production of sugar demanded an enormous amount of fuel, three cords of wood being average for the manufacture of one hogshead. Large numbers of laborers were thus engaged cutting wood and hauling it to the wood shed.

In October or November harvesting began with all hands being sent to the fields to cut the cane. "With four slashes of a heavy knife a stalk would be ready for the cart, one stroke stripping the leaves from the right side, another from the left, a third severing the stalk at the ground, and the fourth cutting off the still-green joints at the top." The cane had to be cut as quickly as possible to preserve the highest saccharine value of the cane and to avoid injury from unexpected cold weather. While the cutters worked, other black field hands gathered the cane and carted it to the mill. Planters used this time to examine the cane, setting aside the choice cane stalks as seed for next year's crop.

The plantation sugar house was the scene of continuous
activity. The fires in the boiling room were never extinguished during the entire grinding season. The hands worked long days; workdays lasted eighteen hours with the Negroes rotating the six hour night shifts. Laborers were assigned individual tasks in the mill, wood shed, cooling shed, curing house, and trash shed. The Southern Agriculturist estimated that for one set of kettles (most large plantations such as Waldeck and those of Abner Jackson had a double set of kettles) it would require:

- twenty knives, twenty binders and cart-loaders, four to six cart boys (this depends upon the distance), two at bagass carts, six to take cane to mill, one feeder, three at kettles, one fireman, who ought to be relieved every six hours, one boy in the horse stable, one in the ox stable, one with wheel barrow to supply firemen with wood, and if you have an engine, another fireman and assistant engineer. For two sets of kettles it will require double the number of these with the exception of bagass carts, attendants on stables and engine.

The manufacturing process began as the cane was fed into the sugar mill. The mill consisted of three fluted iron rollers, two of them set against the other to guarantee maximum squeezing action. The cane was generally "given a double squeezing" as it passed through the mill to extract the largest quantity of juice. Flattened cane stalks (the bagass" which was later used as fuel) were carried to the trash shed to dry. From the mill, the juice passed into a
large receiver or "clarifier". Here the cane juice was treated with lime and strained to separate impurities and neutralize the acids. From the "clarifier" the juice passed into a series of open kettles where the remainder of the clarification process and evaporation occurred. These kettles, the grande, the flambeau, the siron, and the batterie, were made of cast iron and set in solid masonry over the furnace. The juice passed first into the grande where it was immediately mixed with more lime. As the heat increased, a "greenish-gray scum" formed on the surface; Negroes with large copper spoons skimmed the liquid and spooned it into the flambeau. Evaporation of the water in the cane juice took place in the three remaining kettles. The "liquor" was ladled from one kettle to the next as the sugar maker decided that the proper consistency had been reached. In the batterie, the smallest of the kettles, the "liquor" was boiled to the point of granulation. It was then spooned into coolers where the sugar crystallized. Complete crystallization required six to fourteen hours.

The next stage of the manufacturing process was curing. The crystallized sugar was removed from the coolers and firmly packed into hogsheads. These hogsheads rested on timbers a foot or more apart in the curing house; molasses cisterns were located underneath the hogsheads. The liquid remaining in the sugar slowly drained into the
molasses cisterns. Curing required twenty to thirty days, and when completed, seventy-one per cent of the original crystallized matter was left. At least forty gallons of molasses drained from each hogshead during this period. Both products, the molasses and the moist, light brown sugar, were then fully packed and made ready for shipment.

Besides cultivation and manufacturing, sugar planters had other concerns, not the least of which was marketing the crop. Many planters rushed their sugar to market as soon as it was sufficiently drained of molasses to bring a good price. Debts were pressing and planters needed ready cash to prepare for the next season. New equipment and supplies were bought with these early returns.

The Texas planter had three possible ways to dispose of his crop. He might ship it by steam or rail to the Galveston or New Orleans market (generally the wharfage charges, freight expenses, auction fees and insurance costs made shipping to the eastern markets prohibitive). Here factors or merchants sold the crop at auction to the highest bidder. If the owner could be spared from the plantation, he would accompany his crop to market. The second market avenue open to the planter was to sell his sugar at the public wharf to sugar merchants representing the eastern markets. Quintana and Old Velasco, both in Brazoria County, served as ports from which sugar already sold and consigned
to eastern buyers was shipped. Another alternative available to the sugar producer was to sell his sugar to neighbors and local merchants. Although planters frequently sold limited amounts of sugar and molasses to nearby farmers, they generally preferred to ship their products to open markets where competitive bidding usually guaranteed a higher price.

Coastal planters favored the Galveston and New Orleans markets. By 1860 access to these markets was no longer a major problem for Texas sugar manufacturers. The Brazos, San Bernard, and Oyster Creek Navigation Company, chartered in 1850, had successfully completed a series of interlinking canals between these three waterways. Steamers than picked up the sugar hogsheads and molasses barrels from plantation landings on the Brazos and carried them to the Galveston market. The steamer Ogden, for example, made weekly trips down the Brazos between Columbia and Galveston, transporting sugar just out of the curing house to market.

Railroads, however, were the more common method of transporting sugar. By the time of the Civil War, Texas had chartered twenty-six railroads and had three hundred miles. The Buffalo Bayou, Brazos and Colorado Railroad, the Houston Tap and Brazoria Railroad, and the Brazos and Bernard Railway, all chartered in the early fifties, were the lines most used by the coastal sugar planters.
Both methods of transportation, the steamer and the railroad, averaged a freight cost of $3.50 to $4.00 per hogshead. This was a price sugar producers were willing to pay to get their sugar to competitive markets. James T. Perry, owner of Peach Point Plantation in Brazoria County, for example, paid in 1855 $5,364.49 in marketing costs for "storage, expense to Galveston, and expenses after leaving Galveston, which included freight, wharfage, auction charges, cooperage, interest, commission and guaranteeing." Perry's crop of 180 barrels of molasses and 140 hogsheads of sugar was marketed in Baltimore, Galveston, and New York, and the net proceeds brought him $6,781.13 in profits.

By 1850, Texas planters had mastered the processes of cultivation and manufacturing. The quality of Texas cane had improved with experience. Profitable markets had been found, and the transportation problem had been solved. All that remained, it seemed, was to convert this progress into profits.

Optimism which had followed the successful harvest of 1849 dimmed as the crops of 1850 and 1851 were lower in yield than expected. Summer drought stunted the cane, with most of it ripening to a height of only three or four feet. Those planters who harvested the runt cane by November produced an excellent crop, although the output was reduced by more than one-third. Based on the amount
of sugar exported from Galveston, the 1850 crop is estimated at 3,500 hogsheads. Severe cold along with recurring freezes in December 1850 destroyed most of the cane seed for the 1851 crop. As a result, the output of that year was again disappointing low. Only 1,036 hogsheads of sugar were marketed in Galveston (See Table I, page 34).

In spite of the short crops of 1850 and 1851, Texas planters were not disillusioned. Louisiana planters had suffered a similar fate due to the cold weather. This fact served to sooth the feelings if not the depleted pockets of some sugar producers. Frequent reminders in the newspapers that severe cold and frost were not the usual weather conditions of Texas reassured others that this bad luck would not reoccur. A schedule of the investments of the major Brazoria County plantations, published by De Bow in late October, also served to bolster dismayed sugar planters. The chart (Table II, page 35) broke down the capital investments of twenty-nine Brazoria County plantations. Smaller plantations in the county and large sugar establishments in Wharton, Matagorda, and Fort Bend counties, such as Judge Williams', Eli Mercer's and William Stafford's plantations, were omitted from the aggregate capital investment figure of $1,134,000. Texas planters were convinced that such investments were not indicative of a declining industry.

1852 did not disappoint the Texas sugar planters.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>SUGAR-HOGSHEADS</th>
<th>MOLASSES-BARRELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1850</td>
<td>2,782</td>
<td>2,427</td>
</tr>
<tr>
<td>1851</td>
<td>1,036</td>
<td>1,909</td>
</tr>
<tr>
<td>1852</td>
<td>1,329</td>
<td>2,576</td>
</tr>
<tr>
<td>1853</td>
<td>4,076</td>
<td>6,086</td>
</tr>
<tr>
<td>1854</td>
<td>4,754</td>
<td>5,398</td>
</tr>
<tr>
<td>1855</td>
<td>4,731</td>
<td>6,628</td>
</tr>
<tr>
<td>1856</td>
<td>7,570</td>
<td>7,504</td>
</tr>
<tr>
<td>1857</td>
<td>124</td>
<td>-</td>
</tr>
<tr>
<td>1858</td>
<td>505</td>
<td>3,625</td>
</tr>
<tr>
<td>1859</td>
<td>4,366</td>
<td>10,236</td>
</tr>
<tr>
<td>1860</td>
<td>3,462</td>
<td>9,003</td>
</tr>
</tbody>
</table>

"Galveston Sugar Statistics," *Hunt's Merchants' Magazine*, XXXIX (October, 1858), 729; *Texas State Register for 1857* (Galveston, 1857), 9.
"Progress of Sugar Culture in Texas," De Bow's Review, XI (October, 1851), 403.

<table>
<thead>
<tr>
<th>Land Value</th>
<th>Number of Acres Needed</th>
<th>Number of Sugar Houses</th>
<th>Number of Sugar House Value</th>
<th>Aggregate Value of Each House of Value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>000</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

(Schedule of Brazoria County Plantation Investments (1851))

Table II
The favorable season pushed aside any doubts concerning Texas' suitability for cane growing; the state produced the best sugar crop in its history. There were early predictions that the Texas sugar output would be impressive, but the final total of 11,023 hogsheads was more than even the most ardent supporters of the industry expected. Champonier in his annual sugar statement (Table III, Page 37) listed the sugar yields of the individual Texas planters. Brazoria County led the state in production with 8,202 hogsheads of the total. The exports of Texas sugar from Galveston, amounting to only 1,329 hogsheads, did not in anyway indicate the state's successful harvest (Table I, page 34). The 1852 crop was valued at $440,920, or roughly $40 a hogshead. The molasses sales added to this amount.

The 1852 success resulted in enthusiastic support for the Texas industry and at the same time stimulated renewed investment in sugar machinery. Colonel Morgan Smith led other planters in the adoption of the latest equipment. In early 1853, Smith introduced at Waldeck the vacuum pan and the centrifugal desiccator, both of which were designed to accelerate evaporation and facilitate the removal of latent impurities. While Smith concentrated on improving his sugar machinery, other sugar producers in Texas were introducing steam mills on their plantations. By 1858 there were
FORT BEND COUNTY

Estate of G. A. Horton

Wharton County

Estate of G. A. Kember

 Brazoria County

<table>
<thead>
<tr>
<th>Name of Planters</th>
<th>Number of Hogsheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. P. Wiliams</td>
<td>10</td>
</tr>
<tr>
<td>W. W. Meaman</td>
<td>12</td>
</tr>
<tr>
<td>E. M. Mercer</td>
<td>10</td>
</tr>
<tr>
<td>J. F. H. Hered</td>
<td>10</td>
</tr>
<tr>
<td>James O. Myers</td>
<td>80</td>
</tr>
<tr>
<td>Gov. A. C. Horton</td>
<td>320</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Planters</th>
<th>Number of Hogsheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capt. H. Warren</td>
<td>336</td>
</tr>
<tr>
<td>Capt. D. Hardeman</td>
<td>258</td>
</tr>
<tr>
<td>Maj. Abram Shepperd</td>
<td>475</td>
</tr>
<tr>
<td>Henry Gibson</td>
<td>160</td>
</tr>
<tr>
<td>Mrs. Am. Thompson</td>
<td>60</td>
</tr>
<tr>
<td>Col. Henry Jones</td>
<td>240</td>
</tr>
<tr>
<td>J. B. &amp; J. D. Hawkins</td>
<td>410</td>
</tr>
<tr>
<td>Estate of G. A. Kember</td>
<td>125</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Planters</th>
<th>Number of Hogsheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capt. John Hughes</td>
<td>270</td>
</tr>
<tr>
<td>Capt. D. Hardeman</td>
<td>500</td>
</tr>
<tr>
<td>Capt. A. Shepperd</td>
<td>120</td>
</tr>
<tr>
<td>Gov. James Hamilton</td>
<td>450</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Planters</th>
<th>Number of Hogsheads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maj. A. Shepperd</td>
<td>335</td>
</tr>
<tr>
<td>Capt. A. Kember</td>
<td>270</td>
</tr>
<tr>
<td>Capt. D. Sharp</td>
<td>500</td>
</tr>
<tr>
<td>Capt. A. Thompson</td>
<td>120</td>
</tr>
<tr>
<td>Gov. James Hamilton</td>
<td>450</td>
</tr>
</tbody>
</table>

TABLE III

SUGAR CROPS IN TEXAS, 1852

NAME OF PLANTERS | NUMBER OF HOGSHEADS |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P. A. Champonier</td>
<td>Annual Statement of the Sugar Crop in Louisiana for 1852-53</td>
</tr>
</tbody>
</table>
only four horse-driven mills left in Texas.

Despite these investments and improvements, the banner crop of 1852 was never again equaled. Production steadily declined after 1852. A succession of exceedingly unfavorable seasons reduced output, and depressed sugar prices cut profits. Dismayed and indebted planters gradually abandoned sugar production. Local newspapers after 1852 carried frequent notices of plantations for sale, headlined by such statements as "Valuable Sugar Estate in Texas For Sale."

The 1853 harvest began a series of bad seasons. A dry summer and exceedingly hot weather contributed to a reduced crop. Texas output totaled only 8,288 hogsheads, 2,735 hogsheads less than the previous year (Table IV, page 39). The market price of sugar at the same time dropped appreciably from the 1852 rate. While Louisiana sugar brought an average of $48 a hogshead and the Texas product sold at $40 a hogshead in 1852, the 1853 prices dropped to $35 and $27 respectively. Texas sugar manufacturers were naturally disappointed by the low yields and reduced profits, but most looked to 1854 to recover losses. Some planters, however, abandoned sugar production.

Those who stayed with sugar were optimistic; for despite the damp spring and summer drought, there was every indication that a good crop would be made in 1854. But in mid-September, a month before cutting began, a severe storm
TABLE IV
SUGAR CROPS IN TEXAS, 1850-1860

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NUMBER OF HOGSHEADS</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1850</td>
<td>3,500</td>
<td>Approximated from the export figures in the Texas State Register for 1857, 9.</td>
</tr>
<tr>
<td>1851</td>
<td>2,000</td>
<td>Champonier for 1851-2, 44.</td>
</tr>
<tr>
<td>1852</td>
<td>11,023</td>
<td>Champonier for 1852-3, 44.</td>
</tr>
<tr>
<td>1853</td>
<td>8,288</td>
<td>Champonier for 1853-4, 43.</td>
</tr>
<tr>
<td>1854</td>
<td>7,513</td>
<td>Champonier for 1854-5, 40.</td>
</tr>
<tr>
<td>1855</td>
<td>8,277</td>
<td>Champonier for 1855-6, 40.</td>
</tr>
<tr>
<td>1856</td>
<td>200</td>
<td>Approximated from the export figures in the Texas State Register for 1857, 9.</td>
</tr>
<tr>
<td>1857</td>
<td>2,000</td>
<td>Champonier for 1857-8, 44.</td>
</tr>
<tr>
<td>1858</td>
<td>6,000</td>
<td>Champonier for 1858-9, 40.</td>
</tr>
<tr>
<td>1859</td>
<td>3,799</td>
<td>Champonier for 1859-60, 40.</td>
</tr>
</tbody>
</table>
nearing hurricane proportions flattened the coastal cane fields with violent winds and incessant rain. The Brazoria Planter reported the damaging results:

One of the severest storms, that we recollect of ever having witnessed, has prevailed here for the last two or three days.... Houses, fences and trees were leveled to the ground.
The sugar cane has certainly been blown flat to the ground and we much fear that it is so late in the season that it will be unable to right itself.

Damage to cane mills and buildings was extensive, but the almost total destruction of the seed cane was the greatest loss suffered.

After the storm local newspapers carried two types of articles - announcements of plantations for sale and encouraging editorials. The Planter admitted that the Texas farmer had been unfortunate, but it counseled "that they should not be discouraged. It is very seldom, indeed, that such losses as they have sustained occur more than two years in succession." And this Texas newspaper was right, for 1855 proved a much better season. Although some sugar producers were forced to purchase seed cane at inflated prices, the crop was high in quality and yield (Table IV, page 39). Brazoria County alone produced 6,000 hogsheads. The marketable cane enjoyed the most favorable trade conditions in the industry's history. In the Galveston market sugar sold as high as $91 a hogshead (See Table V, page 41).
<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL HOGSHEADS PRODUCED</th>
<th>AVERAGE PRICE IN LOUISIANA</th>
<th>AVERAGE PRICE IN TEXAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1846</td>
<td>140,000</td>
<td>$70.00</td>
<td>$60 - $65</td>
</tr>
<tr>
<td>1847</td>
<td>240,000</td>
<td>40.00</td>
<td>30 - 35</td>
</tr>
<tr>
<td>1848</td>
<td>220,000</td>
<td>40.00</td>
<td>30 - 35</td>
</tr>
<tr>
<td>1849</td>
<td>247,000</td>
<td>50.00</td>
<td>40 - 45</td>
</tr>
<tr>
<td>1850</td>
<td>211,303</td>
<td>60.00</td>
<td>50 - 55</td>
</tr>
<tr>
<td>1851</td>
<td>236,547</td>
<td>50.00</td>
<td>40 - 45</td>
</tr>
<tr>
<td>1852</td>
<td>321,931</td>
<td>48.00</td>
<td>38 - 43</td>
</tr>
<tr>
<td>1853</td>
<td>449,324</td>
<td>35.00</td>
<td>25 - 30</td>
</tr>
<tr>
<td>1854</td>
<td>346,635</td>
<td>52.00</td>
<td>42 - 47</td>
</tr>
<tr>
<td>1855</td>
<td>231,427</td>
<td>70.00</td>
<td>60 - 65</td>
</tr>
<tr>
<td>1856</td>
<td>73,976</td>
<td>110.00</td>
<td>100 - 105</td>
</tr>
<tr>
<td>1857</td>
<td>279,697</td>
<td>64.00</td>
<td>54 - 59</td>
</tr>
<tr>
<td>1858</td>
<td>362,296</td>
<td>69.00</td>
<td>59 - 64</td>
</tr>
<tr>
<td>1859</td>
<td>221,840</td>
<td>82.00</td>
<td>72 - 77</td>
</tr>
</tbody>
</table>

*De Bow's Review, XXIX (October, 1860), 524.*
Nature again made havoc of the planters' expectations for 1856. "Unprecedented frost" during the winter of 1855-56 virtually destroyed the seed cane. The spring destruction forced the Columbia Democrat and Planter to report that the "plantations of Brazoria County for the first time in the history of sugar making in this county are failing of a crop this year." Fears that no sugar would be made at all were openly acknowledged as those few planters who had salvaged some cane decided to reserve it for seed. It was obvious that more money was to be made in selling seed cane than in manufacturing and marketing a short crop. Since only 124 hogsheads were received at the port of Galveston (Table I, page 34), the 1856 cane crop can be approximated at around 200 hogsheads.

Texas sugar growers purchased seed cane at exorbitant prices in 1857 and in effect, began anew. But the planters were once again faced with unpromising weather; Texas in the spring and summer endured five consecutive rainless months. Those plantations which had crude irrigation systems of whatever sort managed to save a portion of their crop. The majority of the coastal planters, however, had no appreciable output. Champonier in his annual sugar report omitted any listing of individual crop yields (as he had done in all previous years except 1856) and merely noted that the reduced crop of that year (Table IV, page 39) led many to abandon sugar production.
After two consecutive years of poor and costly yields, only those planters committed to the sugar industry by virtue of their large equipment investments and financial obligations continued operations. Even then, by 1858, the number of large sugar establishments in Texas dropped from forty-five to thirty-seven. The harvests of 1858 and 1859 were far from impressive; drought and frost again reduced output (Table I, page 34).

The Texas sugar industry was, thus, far from thriving on the eve of the Civil War. At the time the Confederacy rebelliously arose, sugar was no longer an important staple crop in Texas. In Brazoria County, the state's major sugar producing area, only one plantation in five cultivated sugar, and most of these sugar estates were large producers of corn and cotton as well. Droughts, frosts, and storms, all unexpected due to the previous decade's extravagant praise of the Texas climate, prevented the coastal planters from ever equaling the 11,023 hogsheads output of 1852. As nature dealt successive blows to the industry's productive capacity, profits failed to materialize.

Sugar planters during the ante-bellum period never realized large profits and possibly suffered considerable losses. The task of determining whether the Texas sugar industry was profitable during the ante-bellum period is difficult, if not impossible. Plantation records are almost
nonexistent. It is also most difficult to determine the profitability of one staple on a plantation producing several. Undoubtedly, for example, the labor force employed in sugar production was also used to cultivate corn and cotton. Although allowances should be made for the multiple use of certain capital investments, such as land, slaves, livestock, and farming implements, these must necessarily be considered as costs of sugar production alone. Production costs, moreover, varied from plantation to plantation and from year to year. Weather, an all important determining factor in sugar cultivation, is a nonquantitative element which must be taken into account. At best, then, any conclusion on the profitability of Texas sugar production prior to 1860 must rely heavily on generalizations and assumptions.

During the decade of the forties sugar production was probably profitable in Texas. Capital investment in land, slaves, and equipment was comparatively low during the period. Land in the Texas "Sugar Bowl" sold at reasonable rates, for as little as $4.00 to $8.00 an acre, and slave prices were not comparable to the inflated values of the fifties. In addition, few Texas sugar planters incurred large debts to replace dated equipment with more advanced, expensive machinery.
Production costs, on the other hand, were relatively high during the forties. The cost of manufacturing one pound of sugar, including interest on capital, was approximately 2.5 cents. During the period sugar sold in the Galveston market between 4 and 5 cents per pound; thus, profits of 0.3 - 0.5 cents were made per pound of sugar. On a sugar plantation, such as Abner Jackson's in Brazoria County, valued at $71,000, a pound profit of 0.3 - 0.5 cents brought $12,000 in profits on the 240 hogsheads produced in 1849. This is approximately a 5.9 per cent return on investment. Such returns, although varying from plantation to plantation, indicate the probable profitability of Texas sugar production during the forties.

The 1850's brought revolutionary changes to the Texas sugar industry. New equipment, especially the steam-powered mill, increased the capitalization of the coastal sugar plantations. Higher land prices and inflated slave values added to overhead expenses. Capitalization rose almost 90 per cent during the decade. While overhead costs increased, sugar prices averaged only 4 - 5½ cents per pound, an increase of only ½ cent over the previous decade. Planters thus faced decreasing returns on their investments.

While a planter with some financial obligations worried about these declining profits, the planter with large indebtedness found these diminishing returns insufficient to meet expenses and also retire debts. A prolonged period of crop
failures or reduced yields obviously resulted in unprofitable operations. In Texas, seven unfavorable seasons plagued the coastal planters during the fifties. These misfortunes coupled with higher costs leads one to conclude that the Texas sugar industry was far from profitable during the fifties.

In determining the profitability of Texas sugar during the 1850's, an analysis of basic production and overhead costs must be made. After the highly successful crop of 1852, Texas planters were encouraged to expand operations by adding acreage, enlarging their labor force, and improving their sugar machinery. Land which previously sold for $5.00 an acre averaged $15 - $20 an acre during the fifties; farm values increased accordingly. An examination of the 1850 and 1860 census returns indicates that sugar planters in Brazoria County alone more than doubled their land holdings in this ten-year period. Farm values increased four to five times as much in the same period.

Besides the increased expenditures being made for land, sugar planters also enlarged their slave holdings. Like the land values of the decade, available Negro slaves bore inflated prices. The strong, young black man who had sold for $600 in the forties, now sold for $1,000.

Land and slaves constituted a major portion of the capitalization of Texas sugar farms. But by 1850 the shift from horse-driven mills to steam-powered sugar mills accelerated. By 1858 only four sugar plantations still operated horse-driven
mills. The expense of adding or improving one's sugar equipment increased overhead expenses. Steam sugar mills sold for $22,000 at the public wharf in Galveston, while double kettles ($3,000), coolers, cisterns, coppers, etc., constituted additional costs. De Bow estimated the aggregate value of twenty-nine sugar houses in Brazoria County at $392,000.

Capital investments went beyond land, slaves, and sugar machinery. Planters had considerable amounts of money tied up in livestock, carts, ploughs, and farming implements. Cane carts and wagons were valued at $60 during the fifties, necessary farming utensils at $700, and horses at $100.

It was rare that individual planters had sufficient assets to expand their operations without borrowing the necessary funds. A survey of the deed records of Brazoria County reveals that probably only Morgan Smith was able to do this. The others were committed to local merchants and banks for exorbitant amounts. For example, Leander McNeel, owner of a relatively small 400 acre sugar plantation in Brazoria County, owed various merchants and factors $53,901.22. The unsettled claims against Jackson's estate in 1861 amounted to $121,660.55. Creditors generally charged eight per cent interest per annum on long term notes and a six per cent rate on those notes paid within four months.
The annual costs of operating a sugar plantation were impressive as well. Included in these expenses were household expenditures, food and clothing for black workers, yearly repairs to the engine, copper works, the resetting of sugar kettles, hogsheads and barrels (if not made on the plantation), salaries to the overseer, sugar maker and engineer, transportation and marketing costs, and the factor's commission. On a sugar estate working a force of 100 Negro slaves and producing 400 hogsheads of sugar per annum, operating expenses neared $10,000. If additional slaves were hired during the grinding season, this amount increased proportionally. Estimated costs are shown in the following table:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clothing, food and medical costs for 100 Negro laborers</td>
<td>$4,800</td>
</tr>
<tr>
<td>Household and family expenses</td>
<td>500</td>
</tr>
<tr>
<td>Salaries - overseer, sugar maker, and engineer</td>
<td>1,500</td>
</tr>
<tr>
<td>Yearly repairs to engine, kettles, etc.</td>
<td>1,000</td>
</tr>
<tr>
<td>Hogsheads and barrels (1.25 each)</td>
<td>600</td>
</tr>
<tr>
<td>Transportation (3.50 per hhd.)</td>
<td>1,400</td>
</tr>
<tr>
<td>Marketing costs (auction charges, wharfage, and insurance)</td>
<td>500</td>
</tr>
<tr>
<td>Factor's commission (2½ per cent)</td>
<td>500</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$10,800</td>
</tr>
</tbody>
</table>

Generally this base figure increased as unexpected expenses occurred. One frequent additional expense for
many planters was the cost of hiring additional hands during harvesting and grinding periods. The expansion of the industry during the 1850's brought with it an increased demand for Negro laborers. When planters could not purchase the slaves they needed, they hired them from nearby neighbors. Local newspapers carried frequent advertisements of planters seeking Negroes. Negro slaves were usually hired at public auction, the slaves going to the highest bidder on credit for twelve months at ten per cent interest. The employer, in addition, agreed to pay for the slave's food, clothing and medical expenses. These up-keep costs amounted to around $2.00 per month while the average price paid for a male slave was $250 - $300 per annum.

The cost of producing sugar during the fifties considering the above expenses and an eight per cent return on investment was 4 - 4½ cents per pound of sugar. Sugar prices were adversely effected by tariff legislation in 1846 and 1857. Reduced import duties along with an expanded supply of domestic sugar contributed to a lowering of sugar prices. Table V, page 41 shows the downward trend prices took from 1846 only to recover slightly in 1854 - 1855 and return to a steady decline after the inflated values of 1856.

With capitalization averaging $200,000 per plantation costs, 4 -4½ cents per pound of sugar, and prices dropping continuously, Texas sugar producers were for the most part of the decade operating at a loss. With the exception of
1852, and possibly 1853 and 1856 (years the Texas growers had respectable crops) planters were barely making ends meet. Reduced crops and returns prevented many planters from meeting overhead expenses, let alone retire any debts that they had incurred. Some indebted planters were, on the eve of the Civil War, considering the advisability of continuing sugar production. Others had already abandoned it.

Texas sugar culture in early 1861 was not a promising nor expanding industry. Sugar production had suffered from natural calamities and deflated sugar prices. Financially indebted planters undoubtedly found sugar production unprofitable or at least less profitable than anticipated. There is every indication that if the war had not halted the industry's growth, inflated farm values and low prices would have caused a gradual decline of the industry. The war merely accelerated this process of decline.
NOTES


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42 De Bow's Review, XXIX (October, 1860), 524.


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47 Probate Records of Brazoria County, C-440-47.

48 Ibid., C-311; C-603.


51 Costs estimated from figures in John McKay to J. V. Williams, December 15, 1849 in the Samuel May Williams Papers, Rosenberg Library, Galveston, Texas; Curlee, "A Texas Slave Plantation," Southwestern Historical Quarterly, 102-03; Olmstead, Cotton Kingdom, 481; Sitterson,
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CHAPTER THREE

COLLAPSE, RECOVERY AND ABANDONMENT

The Civil War and years immediately thereafter brought the Texas sugar industry to the brink of extinction. Although coastal sugar planters were spared the more extreme ravages of war, the industry did suffer from the inevitable consequences of war and defeat. Decreasing demand, tightening of credit, emancipation, and the 1869 tariff had disastrous effects of the Texas industry. Successful sugar harvesting, manufacturing, and marketing became impossible.

Life in the Texas sugar region underwent no abrupt change during the days immediately following Fort Sumter. Planters were more concerned about the various weather threats to their cane than by any possible inconveniences the war might bring. A record crop was harvested and processed in 1861. Disposing of the sugar, however, presented the first of the wartime disabilities. Because of the coastal blockade, planters were forced to dispose of their sugar in Galveston, accepting the going market price. With eastern and northern buyers absent from the market, there was little demand for sugar. To complicate the situation, Louisiana planters were advised by their agents to avoid
the New Orleans market and sell their sugar in the Texas Gulf cities. The influx of the Louisiana sugar, far superior in quality to the Texas product, severely cut Texas sales. The result of both of the lack of buyers and the competition of the Louisiana cane was a serious deflation of sugar prices. Profits decreased accordingly.

The collapse of sugar prices was immediately followed by a tightening of credit by local merchants and banks. Since the planters had failed to market profitably their sugar, the returns made were insufficient to meet annual financial obligations. Creditors were reluctant to advance additional funds. Planters without sufficient supplies felt the squeeze at once; those with some liquid assets or inventory postponed the inevitable consequences of the money crisis. Unlike the long-term, low interest rate notes to which they were accustomed, sugar producers were forced to borrow on short-term, high interest rate notes. Interest rates rose to as much as twenty per cent per annum.

Some planters tried to rent or sell part of their lands to acquire the necessary capital to continue operations. But here again the coastal sugar manufacturers met disappointment. With the virtual disappearance of Southern capital, bank stocks and deposits depreciated in value. Since a large percentage of the bank's assets were land mortgages, land values decreased as credit tightened. Real
estate declined by ten to twenty-five per cent its prewar value. In the ten years from 1860 to 1870 the value of Texas farms dropped 31.1 per cent, from $88,101,320 to $60,149,950. Rents and sale prices were also considerably lower than the 1850 rates. In January 1866 William Masterson rented Leander McNeel's plantation in Brazoria County for $100 for a twelve month period; two years later the same plantation rented for $57. Choice Brazos River lands, once bringing $15 to $25 an acre, now sold for 30 cents to $8.15 an acre. With such prices, land sales proved unsatisfactory as a means of acquiring limited liquid capital.

In addition to the curtailment of credit, the most disastrous result of the war was the labor loss. In Louisiana the arrival of Federal troops in the sugar region marked the demoralization of the slave population; a mass exodus to Federal lines resulted. Although Texas was spared actual Federal invasion, news of Negroes leaving the plantations in the upper South produced the same, but belated effects in Texas. As Negroes left the plantations, capital investment values in Texas fell; planters suffered a $106,688,920 loss with the freeing of 158,595 slaves. Besides forcing many planters into bankruptcy, this total destruction of slave property investments threatened and considerably reduced the commercial value of the industry.

Emancipation also dealt a severe blow to the
traditional Southern way of life. More than the economic loss the planters sustained, the idea of free Negroes appalled the plantation society. Emancipation struck at the very core of Southern society - its stratified class system; and in doing so, it became the first of the many disintegrating factors in the total dismemberment of the plantation system.

Emancipated Negroes presented a sizable readjustment problem to Southern planters, long raised on the idea that only black labor could produce sugar and cotton. Sugar producers were convinced that freed black men would prove unreliable as workers. Aaron Coffee, a Brazoria County sugar planter, wrote pessimistically that "the owls and bats came into our sugar houses when the negro was emancipated. The freedman would 'sorter' raise cotton, but not sugar cane which required compulsion and hard work."

Sugar growers chose to ignore the economic consequences and the disruptive conditions generated by the war. Instead they blamed the lack of reliable labor as the cause of low production and meager profits. M. S. Munson, also a Brazoria County sugar producer, analyzed the Negro labor problem in a letter written for the Texas Almanac in 1866:

The present crops are but half an average owing entirely to the impossibility of getting the negroes to work. The negroes do not do more than about one-fourth as much as when slaves. The mortality among them, owing to dissipation and having no one to take care of them and their children, as formerly, has increased twenty-five per cent."
George A. Ferris of Fort Bend County readily agreed with this opinion when he wrote, "In a great majority of instances, the negroes have worked listlessly, and to kill time instead of grass and weeds."

After the war planters for the first time faced a mobile labor force. Negroes moved frequently and unexpectedly in hopes of finding better working conditions. Sugar planters could not rely on their black laborers to remain the entire growing season. Many workers left just as the grinding season began, and the workload substantially increased. Planters also faced a more vocal, obstinate labor force. Black women and children now simply refused to work in the fields, and former male slaves were reluctant to work their prewar workloads. Negroes acquainted with the "forty acres and a mule" rumor refused to make any type of employment contract. As some viewed it, "there was no use in working if they were to be made rich in a little while."

Convinced that "until freedmen learned that their freedom meant 'freedom to work' their labor was unreliable for sugar culture," planters turned their attention to immigration schemes. Private and corporate efforts were made to sell Texas and sugar to white Europeans. For the most part these plans failed. There is evidence, however, that some immigrants were attracted to the Texas "Sugar Bowl" region and that the planters were highly impressed with their
work. "One of the (plantations) cultivated in cane and worked by laborers just from the south of France," reported a Brazoria County planter, "has produced better than it ever did when worked by the same number of slaves."

Even if a sufficient number of laborers could have been found, there were few planters who could afford to hire them. The shortage of workers raised wage rates considerably. As labor costs increased, production costs rose simultaneously. To reduce production costs the planter had to improve cultivation methods, relying more on scientific procedures and advanced machinery than on manual labor. The lack of capital prevented the adoption of labor-saving techniques. It also prevented the hiring of sufficient laborers to tend the fields in the old way.

Faced with insurmountable financial difficulties, sugar planters were left with three alternatives. Those with enough confidence in sugar production borrowed the requisite capital for production on short-term, high interest rate notes. These newly contracted notes were usually renewed year after year until it became impossible for the planter to liquidate his debts. Some planters like Hamblin Bass, simply mortgaged more possessions. "Because of the disturbances of the last five year," Bass frankly admitted that he was unable to meet his "payment debts as stipulated." "Although the property in the said ninety-five slaves has
been destroyed by reason of the said civil disturbances, thus greatly weakening the mortgage and the value of any personal obligation for the payment of the said promissory notes," Bass promised to retire his debt as soon as possible. To prevent foreclosure, Bass mortgaged, in addition to the plantation and sugar house and equipment, "50 head of mules, 35 crook oxen and all the workteam on Waldeck not already mortgaged" as well as "all the household and kitchen furniture and implements of husbandry, all the bacon, corn and other forage on the plantation, the buggy and all personal effects on the plantation, the present crops and the crops for the years, 1866, 1867 and 1868."

Some planters were in this manner able to forestall the inevitable result of financial over-extension. Others faced bankruptcy early. As Sterling McNeel, Jr., was adjudged bankrupt and discharged of all his debts in January, 1870, so many other Texas sugar producers faced similar fates.

The second and third alternatives opened to the planter in combating high production costs were similar in nature. The planter could reduce his cane acreage and utilize his available labor force to utmost capacity and efficiency. Small, well-tilled farms which practiced diversified agriculture and produced ten to fifteen hogsheads of sugar were the best hope for the survival of the sugar industry. Unfortunately, the movement toward smaller land holdings was hampered from
the start; immense acreage, hundreds of laborers and expensive sugar machinery were still thought essential to sugar production.

Planters could, on the other hand, face the reality of the postwar situation and abandon sugar production entirely. Improved cotton prices in the late sixties prompted many planters to shift cane acreage to cotton. For many planters, however, the lack of capital, deflated farm values, depleted farm stock, worn out equipment, and high labor costs were obstacles too severe to overcome. These planters liquidated their holdings at astonishingly low prices and left the sugar region.

Regardless of the decisions of the planters, the result was the same - low production and near extinction of the industry in the sixties. In the five years from 1861-1865 the Texas sugar region produced a mere 3,890 hogsheads, as compared with the 11,956 hogsheads produced in the preceding five-year period. Crop yields increased somewhat after 1868. The Commercial Bulletin of Galveston recorded a small harvest of 1,000 hogsheads of sugar and 200 barrels of molasses that year. Output increased in 1869 to 2,020 hogsheads and 246,062 gallons of molasses. The 1869 crop was still forty per cent below prewar production figures.

For the slowly recovering industry, the tariff of 1869 proved a disastrous setback. Recuperating planters saw their relatively high sugar prices of $10\frac{1}{2} - 13\frac{1}{2}$ cents
per pound take a drastic dip as tariff duties were lowered \(^{18}\) from three to two cents a pound. The effect of the 1869 tariff together with the problems of insufficient demand, capital, and labor kept the Texas sugar industry in a depressed, crippled state. But recovery had not become impossible; the industry simply had to re-establish itself along new lines.

After reconstruction, the demand market situation improved so that investment in sugar was once again worthwhile. The shortage of capital was solved in Texas by incorporation of sugar properties. As insolvency, death and despair forced the sale of sugar plantations, cheap land invited men of money to buy up these sugar estates. Gradually the old landed proprietor was replaced by the new business entrepreneur. In Texas in 1880 there were forty-five sugar plantations operating separate mills in Brazoria, Fort Bend, Matagorda, and Wharton counties. Self-sufficient plantations dropped from 45 in 1880 to 14 in 1892 to 8 in 1907.

While incorporation helped to solve the problem of insufficient demand, the convict lease system reduced the chronic shortage of labor. Unlike Louisiana, Texas was unable to draw white immigrants to the coastal cane fields. Since the war, planters had relied on Negro labor which had proved insufficient in numbers and unstable in residency. Although the Texas legislature had authorized the employment of convicts on railroad construction projects as early as 1866, it was
not until 1871 that planters began to lease convicts to work on the sugar estates. That year the Huntsville penitentiary with its entire prison population was leased to A. J. Ward, E. C. Dewey, and Nathan Patton. They, in turn, sublet the convicts (489) to sugar planters in Brazoria and Fort Bend counties. The state resumed control of the penitentiary before the expiration of the lease because of the apparent mistreatment of the convicts.

Employment of convict labor on Texas sugar plantations increased while the prison system was under lease to E. H. Cunningham and L. A. Ellis, both Fort Bend County sugar producers. The state expressly authorized the practice of subletting convicts in 1876.

The right to hire out convicts and to operate them outside the walls, either by the state or lesses, is expressly given, but they shall be hired out in as large of forces as practicable, concentrated as much as possible and easily accessible so that they may be kept more secure, better provided for and more frequently inspected.

Under the Cunningham and Ellis lease the state was completely relieved of maintenance responsibilities. In addition, the state received $3.01 per month per convict; this made the penitentiary system a source of revenue rather than a liability on the taxpayers. From 1878-1883 no less than 75-85 per cent of the convict population worked outside the penitentiary. Out of a prison population of 2,157 in 1880, 1,033 or 56.9 per cent were employed on sugar esta-
blishments. While the state received $3.01 per month per convict from the lessees, Cunningham and Ellis charged the coastal sugar producers $12 to $14 a month per convict.

The state soon realized that more money could be made if the prison superintendent contracted directly with the planters for the use of convict labor. In 1883 the Texas State Legislature terminated the leasing of the penitentiary as a whole and adopted the convict lease system. Under the new system convicts were leased in such numbers as the plantation owners desired. These first contracts were made for $15 a month per convict with the contractors furnishing food and shelter. Contractors were guaranteed ten hours of labor from each convict.

The rules and regulation by which the contractors were to abide were specified by the prison board. The "hirers" were to provide "a good safe and comfortable prison... with lights and necessary fuel. The prisoners were to be furnished with good, wholesome food and a sufficiency of it...and plenty of shoes and bedding." Working conditions and the length of the workday were also specified.

Hirers of convict labor shall not require work in the rain or on Sunday, except such work as is absolutely necessary, such as hoeing and attending stock. On sugar farms when Sunday work is absolutely necessary to prevent great loss, then if the convicts are required to work, the hirer shall pay each convict the sum of 50¢ for each Sunday....
When night work is required as in sugar making...the convict so employed at night must have his broken rest made up in daytime. Convicts on outside forces shall not be turned out of the building until daybreak, and shall stop work in full time to be brought to the prison before dark.\textsuperscript{31}

Despite these regulations, there were frequent violations of the contract provisions, especially on the sugar plantations in Brazoria County. Naturally, sugar planters were involved in a financial venture aimed at making maximum profits. The sugar planter undoubtedly tried to get the most of his paid labor, hoping that the work produced would reimburse him for his original outlay. As a result prisoners were frequently overworked and severely disciplined. Prison inspectors reported numerous deaths caused by sunstroke - "sunstroke being a convenient name for overwork under a hot July or August sun."\textsuperscript{32} The lash was often applied to force maximum effort out of the convicts. A state inspector upon visiting the Lake Jackson sugar plantation found "three trusty convicts whose backs were cut to pieces in a most shocking manner."\textsuperscript{33} Inspector reports also indicated other violations of the regulations, such as a lack of medical attention, insufficient food and filthy living conditions.

Whatever the system's faults, the convict lease operation was defended on two points. The state did not have the proper facilities to employ all the prison population in productive employment. Necessity demanded the
leasing of convicts. The second reason for support of the system was most persuasive. The leasing of prisoners not only relieved the taxpayers of supporting a negative institution, but it also provided additional revenue for the state.

From 1883 until 1914 the state hired out its prisoners mainly to the coastal plantation owners. The number leased increased from 1,065 convicts in 1882 to 1,412 in 1898. Due to repeated, unfavorable reports, the number of convicts employed on the Brazos River farms gradually decreased after 1900. More and more prisoners were then employed on the newly acquired state farms.

The availability of reliable workers stimulated renewed interest in the Texas sugar industry. As in the 1840's, promoters of sugar culture made new and exaggerated claims of the industry's potential. Once again sugar was spoken of as a sure crop. "It is a crop that will stand the storm, the droughts, or more rain, more cold and less cultivation. After you get a stand, you are perfectly sure of making a crop." Profits were adjudged substantial and easily made; the industry was "an almost certain road to wealth." Sugar cane yields were exaggerated as were the prices for which sugar sold. Perhaps the most absurd of all the claims made was that William Dunovant, a well-known Wharton County businessman.
You have only to plant the sugar cane in the bosom of old Caney and reap a golden reward that will not only repay you, but thousands will feel the beneficence of the act. You have a perpetual Klondike lying at your feet.*

Despite all this glowing praise, few small farmers undertook the cultivation of sugar. Those in cane production already did, however, increase their acreage. The statistics show that although the number of sugar producers steadily declined after 1880, sugar acreage increased. In 1879, Texas devoted 10,224 acres to sugar cane; this acreage increased to 16,284 in 1889, and doubled to 34,315 acres in 1909. After 1909, as the industry declined, cane acreage decreased.

In addition to the expanded sugar plantings in the old "Sugar Bowl" district, sugar took hold in the Rio Grande Valley. The Brownsville area, opened by railroads and abetted by the construction of irrigation canals, became the newest cane-growing region in Texas. The Valley area attracted Louisiana sugar planters with its promise of long growing seasons and few frosts.

Although increased acreage and new cane lands in the Rio Grande Valley stimulated the industry in the late nineteenth, early twentieth centuries, it was the entrance of the state of Texas into the role of sugar producer and manufacturer that sustained the industry on a prosperous level until 1910. Repeated and intense criticism of the convict lease system prompted the state to investigate the
possibility of managing its own agricultural farms. Since the majority of the convicts were leased to sugar planters who were enjoying substantial success with the staple, the state acquired tracts of land most suitable for cane growing.

In 1886 the Penitentiary Board bought the old Harlem Plantation on Oyster Creek in Fort Bend County for $25,000. As admitted by the penitentiary superintendent, the main purpose in buying the farm "was to make sugar the principal crop, having found out that "Messrs. Cunningham and Ellis...were making a grand success of sugar." One hundred acres were planted in cane in 1887; this was increased to 450 acres the following year. By 1888 Harlem farm boasted a $25,000 two story sugar house, fully equipped with the latest and most improved sugar machinery.

With the state fully committed to sugar culture, the biennial penitentiary reports analyzed the effects of weather, market conditions, prices, etc., on prospective profits. Enthusiastic support for sugar, which was widespread throughout the state, was also evident in the superintendent's reports. The director of Harlem Farm repeatedly urged the Penitentiary Board to increase cane acreage, emphasizing that sugar was the "real paying crop of the farm." Success crowned the director's efforts. The 1888 crop brought the state $74,640.40.

Despite a few setbacks because of freeze and drought,
the state continued to expand its sugar operations. Encouraged by the success of the Harlem Farm, the Penitentiary Board purchased Clemens Farm for $77,261.40 in 1899. Clemens Farm, located in Brazoria County and including the plantation lands of the McNeel brothers and David and Robert Mills, was bought with the idea of expanding the state's sugar acreage. At the turn of the century, the Texas Penitentiary system was one of the largest producers of sugar in the state. It had nearly 3,500 acres planted in cane and realized profits greater than any of the other sugar manufacturers.

Despite the external appearances of prosperity, the Texas sugar industry had on the eve of the twentieth century made little advance since the 1850's. The census of 1900 listed Texas as producing 2,789 hogsheads of sugar and 88,637 gallons of molasses. Even though 71,296 tons of cane were reserved for seed, forty years of technological developments, improved sugar machinery, and modernized techniques had made little noticeable impression of the industry, as evidenced by the output figures. The obstacles which the industry partially overcame in re-establishing itself after the Civil War reappeared in the early years of the twentieth century. The industry steadily declined and by 1926, Texas cane culture was dead.

In analyzing the twentieth century decline one finds a similarity and a repetition of the factors which contributed
to the industry's decline in the 1850's. Cane culture continued to be hampered by a lack of sufficient capital. The construction of expensive mills, the employment of large forces of men and stock, and the expense of modern machinery and equipment made sugar production essentially a plantation proposition. Undoubtedly, the inability of small farmers to undertake the cultivation of sugar curtailed the progress and contributed to the decline of the Texas sugar industry.

Just as the pre-Civil War industry has been adversely affected by the lowering of the tariff rates, so the industry at the turn of the century also suffered from competition of foreign-made sugar. Planters had found import duties essential to the prosperity of the Southern cane industry. United States tariff policies had been under constant criticism during the 1870's and 1880's. The Treasury surpluses of 1881 and 1882 led to renewed interest in the lowering of the tariff. After having been raised, the U. S. tariff on sugar was again lowered to the 1869 level with the Tariff Act of 1883. Congressmen, however, interested in improving Latin American and United States trade relations were pushing for free sugar.

The McKinley Tariff of 1890 admitted all raw sugar free and planed a $\frac{3}{2}$ per cent duty per pound of refined sugar. The domestic producer was thus forced to sell his sugar at a lower price, generally one less than profitable. Congress,
however, did provide domestic sugar growers with a bounty of two cents to make up for the loss they sustained in the market. Although the two cent bounty was equal to the former two cent import duty, collection of the bounty made it much less attractive. The planter now had to file descriptions of expenses and crops, secure licenses, and submit to the usual government regulations prescribed to prevent fraud.

Although the bounty on sugar was to have been paid for ten years, Congress paid bounties on only four sugar crops. Some planters could not be troubled with the regulations connected with the bounty and simply sold their sugar at substantially reduced profits. Governor James S. Hogg of Texas vetoed a bill providing for acceptance of the bounty on sugar manufactured at the Texas prison farms. He declared that if Texas accepted such an arrangement, "she would debase her dignity, prostitute her honor and appear before civilization as a humiliated suckling, holding on the breast of the Federal government." Thus, until the Dingley Tariff of 1897, which levied duties of .95 cents on refined sugar, Texas prison farms sold their sugar at lower prices than most sugar producers. Low import duties on sugar contributed to lower profits and led many growers to abandon sugar cultivation.

Another factor contributing to the decline of sugar production in the early 1900's was the abolition of the
convict lease system. Repeated criticisms levied against the system led to its abandonment in 1914:

In no event shall the labor of a prisoner be sold to any contractor or lessee to work on farms or elsewhere, nor shall any prisoner be worked on any farm or otherwise upon shares, or upon any other farm or place than that owned or controlled by the State of Texas.

For the coastal plantations which relied heavily on convict labor, this meant disaster. Sugar producers once again faced a shortage of labor.

The last, but certainly not the least of the reasons for the decline of cane production in Texas, was the weather. Despite the technological advances and improvements made in cultivation and manufacture from 1865 to 1900, the hazards of unfavorable weather were not materially reduced. The droughts, frosts, rains, and storms which had plagued the ante-bellum planters continued to reduce and destroy the cane crops of the twentieth century. In February 1899 Texas and Louisiana suffered from the coldest temperatures of the century. Louisiana sustained a crop loss of forty per cent, and Texas suffered a sixty per cent loss in yield. The 1900 cane crop was almost totally destroyed by the storm that hit during late summer. The torrential rains flattened the cane, and resulting floods carried away stock and farming implements.

Although the disasters of 1899 and 1900 did not
repeat themselves, other calamities severely reduced the cane crops of subsequent years. Because of the extreme wet weather during the winter of 1902-03, "a great deal of cane stubble rotted...and in consequence of the drought from April to July, 1903, very few of the cane farms paid expenses." 

Unfavorable weather continued to threaten the Texas cane industry, but the July 21, 1909 storm dealt a severe blow to the industry. It demolished the sugar house on Clemens Farm and left considerable damage to other sugar establishments. The cane crop was reduced 25-30 per cent its expected yield.

After 1910, the cane industry in Texas rapidly declined. The freeze of 1912 and the losses sustained from the various plant diseases were discouraging to remaining growers. The sugar cane borer made repeated appearances during the decade causing severe damage to the cane plant. The result was a marked decline in output and production. The 2.043 acres planted in cane in 1910 was reduced to 1,171 acres by 1920. Output in the same ten year period dropped from 12,000 tons to 3,000 tons. The early years of the twenties witnessed a wane of interest in sugar production. By 1926, Texas ceased to produce cane at all.

For almost one hundred years the Texas cane industry had sustained itself by meager successes, exaggerated claims, and unfaltering hopes. Although at no time during its existence did the industry produce more than three per cent
of the total United States product, the sugar culture captured the imagination of countless Texans. Sugar cane, at most, represented the efforts of hopeful planters to establish an industry responsive to the needs of Texans and economically beneficial to the coastal area. That these efforts failed is not indicative of any lack of determination on the part of Texas cane promoters but rather of insurmountable difficulties. Though insufficient capital and labor always proved themselves obstacles to expansion and modernization, the Texas weather, in the final analysis, was the most decisive cause of failure.
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55 Ibid., 89; State Penitentiary Reports for 1904, 20.

56 State Penitentiary Reports for 1910, 18.


ESSAY ON SOURCES

PRIMARY MATERIALS

Manuscripts

County records were of primary importance in the study of the Texas sugar cane industry. Since Brazoria County was the largest cane producing area in the state, both the Deed Records and the Probate Records of that county were examined. The Deed Records (County Clerk's Office, Angleton) contained valuable information on the individual sugar plantations, land transactions, mortgages, and bills of sale. These records verified the indebtedness of most sugar producers. The Probate Records of Brazoria County provided detailed descriptions of evaluations of the sugar estates. Not only did these records indicate individual and plantation wealth, they also served as a valuable index of slave and sugar prices over the years.

Although not directly concerned with the Texas sugar industry or Brazoria County, the Samuel May Williams Papers (Rosenberg Library, Galveston, Texas) proved a useful source. Ruth Nichols, Index to the Samuel May Williams Collection (Galveston, 1956) easily located material pertinent to sugar cane. Select letters contained information on sugar sales,
prices and shipments in Galveston. The New Orleans Commercial and Weekly Prices Current, which included sugar prices in eastern, New Orleans and Galveston markets, was available in the collection.

An Agricultural Scrapbook on Brazoria County was found in the Archives Division of The University of Texas at Austin. This file contained various materials on the old plantations and their owners. The useful source in this collection was a Works Progress Administration study on the county's Agricultural Statistics, 1900-40. The decline of the Texas sugar industry in the twentieth century is clearly evident from the statistical listings of cane acreage and production.

The manuscript census returns for Texas for 1850 and 1860, Schedule III, "Productions of Agriculture" are on deposit at the Texas State Library in Austin. These supplied data on Texas sugar farms, such as value of the estates, acreage devoted to cane, and production in hogsheads.

Printed Official Documents and Miscellaneous Government Sources

Vital information on the Texas cane industry and topics directly related to it appears in printed official documents and reports. The Census Bureau has made available a diverse collection of statistics which are of prime interest to historians. For the early period of the Texas sugar
industry, the United States census for 1850 and 1860 were invaluable. J. D. B. De Bow, *Statistical View of the United States,... Being a Compendium of the Seventh Census (1850)* (Washington, 1854) and Joseph C. G. Kennedy, *Agriculture of the United States in 1860* (Washington, 1866) supplemented the manuscript returns of 1850 and 1860. The *Compendium of the Ninth Census, 1870* (Washington, 1872) and *Abstract of the Twelfth Census of the United States, 1900* (Washington, 1902) provided county-by-county breakdowns of farm values, cane acreage, cane production, and values of the Texas cane crop from 1870 to 1900 inclusive.

The United States Department of Agriculture prints two annual publications which contain some information on twentieth century Texas sugar culture. These are the *United States Department of Agriculture Reports* and *Yearbook*. The *Reports* are a series of accounts on specific crops and production problems while the *Yearbook* is an annual collection of statistical data on agriculture. The *Yearbook for 1915* was most valuable since it contained production figures for Texas cane for the period, 1856 to 1900.

Agricultural statistics and records for Texas were from 1887 to 1907 collected by the Department of Insurance, Statistics and History. In 1907, when the Office of Commissioner of Agriculture was created, the duties referring to agriculture were transferred to the new office. Annual
Reports of the Texas Agriculture Department began in 1907 and were thus of little use in this study. The Texas Department of Agriculture's Bulletin for 1909 contained a brief review of the Texas sugar cane industry. It was especially useful in its analysis of the causes of the industry's decline.

Other official reports instrumental in the study of Texas cane production were the Biennial Reports of the Comptroller and the Reports of the Superintendent of the State Penitentiary. The comptroller's reports included revenue statistics of the convict lease system as well as the losses and profits of cane production on the state prison farms. The State Penitentiary Reports were a valuable source of information for the Texas industry during the 1890's and 1900's. Herein, the convict lease system was carefully analyzed as to specific contractors, wages, regulations and abuses. When the state assumed the role of sugar producer, these reports provided market and weather information related directly to sugar.

Two miscellaneous government documents were A Record of Evidence and Statements Before the Penitentiary Investigating Committee (Austin, 1913) and Rules, Regulations, and By-Laws for the Government and Discipline of the Texas State Penitentiaries (Austin, 1883). Both these works contained pertinent data on the convict lease system, contract agreements
and provisions as well as testimonial accounts of abuses of the system.

**Contemporary Accounts**

Valuable information on the Texas cane industry is available in numerous contemporary sources. *De Bow's Review* was one of the outstanding agricultural magazines of the nineteenth century, and as such, contained detailed information on the Texas sugar industry. Material on the individual planters, methods of cultivation and manufacture, and sugar statistics were all found in this monthly publication. *Harper's Weekly* at various times carried articles on the history of the cane industry as well as on the processes of cultivation and manufacture. *Hunt's Merchants' Magazine* provided material on Texas sugar exports.

A much more extended discussion of the Texas cane industry was found in J. D. B. De Bow, *Industrial Resources, Etc., of the Southern and Western United States* (Washington, 1856). Introduction of sugar cane in Texas, early developments, important planters and plantations were covered in this three volume work. P. A. Champonier's *Annual Statement of the Louisiana Sugar Crop* (New Orleans) unbiasedly analyzed the growth and development of the Texas industry. Production figures by Texas counties and planters were included in these reports.
Extremely valuable to this study of Texas sugar were the Texas State Almanac and the Texas State Register, both of which were published annually during the late 1850's and 1860's. Of lesser importance was Affleck's Southern Rural Almanac. Both Affleck's publication and the Texas State Register discussed cotton and sugar production problems; the State Register annually listed Galveston receipts of sugar from the interior. The Texas State Almanac, besides furnishing statistical breakdowns of all the Texas counties, also included informative articles by the sugar planters themselves. These articles were mainly concerned with the problems of sugar growing. After the Civil War the Almanac was a valuable index of the labor problem in Texas.

Travel accounts and memoirs contained interesting descriptions of the Texas sugar region as well as useful comments, claims, and exaggerations of the Texas industry. "J. C. Clopper's Journal and Book of Memoranda for 1828," Southwestern Historical Quarterly (July, 1909); Eugene Barker (ed.), "Description of Texas by Stephen F. Austin, 1828," Southwestern Historical Quarterly, XXVIII (October, 1924); "Reminiscences of Mrs. Dilue Harris," Quarterly of the Texas State Historical Association, IV (April, 1900); and Ephraim D. Adams (ed.), "British Correspondence Concerning Texas," Southwestern Historical Quarterly, XIX (April, 1916), XX (July, October, 1916) all are concerned with aspects of
the early industry. David B. Edward, *The History of Texas; or the Emigrants', Farmers' and Political Guide* (Cincinnati, 1836); *A History of Texas; or the Emigrant's Guide to the New Republic* (New York, 1845); William Kennedy, *Texas: The Rise, Progress and Prospects of the Republic of Texas* (London, 1841); Mary Austin Holley, *Texas* (1836); and Joseph De Cordova, *Texas: Her Resources and Her Capabilities* (Galveston, n. d.) not only concentrated on early developments, but also dwelt on the promising future of the cane industry.

**Newspapers**

Newspapers have long been an excellent source of information. Texas sugar is not exception. In fact, local newspapers, especially those published in Brazoria County, provided valuable material on all aspects of the Texas-sugar industry. Information on the effects of weather, the industry's progress, and plantation activities was available in various contemporary newspapers.

General material on developments and progress of Texas cane culture was found in the *Texas State Gazette*. Statistical facts, such as production and export figures, were reported in the *Gazette*. The *Brazos Courier*, the *Texas Republican* and the *Texas planter*, all published in Brazoria, dealt specifically with the industry in that county. The *Columbia Democrat and Planter* was similar in coverage to the
Brazoria newspapers. Market prices and conditions were available in both the Commercial Bulletin (Galveston) and the Galveston Commercial and Prices Current.

SECONDARY SOURCES

There has been very little written about the Texas sugar industry, but secondary sources on the sugar industry and Texas abounds. The most extensive study of sugar is J. Carlyle Sitterson, Sugar Country: The Cane Sugar Industry in the South, 1753-1950 (Lexington, Ky., 1953). Another rather brief work on sugar cane history is W. G. Taggart and E. C. Simon, A Brief Discussion of the History of Sugar Cane (Baton Rouge, 1940). General economic histories of the South contain some pertinent information to cane, such as early history, the sugar process and production. Although both Emory Hawk, Economic History of the South (New York, 1934) and Robert Somers, The Southern States Since The War deal limitedly with sugar in the South, Lewis Cecil Gray, A History of Agriculture in the Southern United States to 1860 (2 vols., New York, 1941), has considerable material.

Little extensive research on the Texas sugar industry has been done. Abigail Curlee, "A Study of Texas Slave Plantations, 1822-1865" (unpublished Ph. D. dissertation at The University of Texas at Austin, 1932) is probably the most detailed account of the Texas sugar industry. Abner Strobel,
The Old Plantations and Their Owners of Brazoria County, Texas (Houston, 1930) acquaints one with the sugar planters of that county. Little else is worthwhile. Certain isolated facts are available in Joseph L. Clark, The Texas Gulf Coast: Its History and Development (New York, 1955). Limited information on the cane industry of Texas during the twentieth century is found in Harry Benedict and John A. Lomax, The Book of Texas (Garden City, N.Y., 1916). Since this study fails to cover the state's involvement in sugar in the early 1900's, it is of limited value.

County histories were of some relevance to this study. A History of Brazoria County by the Brazoria County Federation of Women's Clubs contains a few interesting comments on plantations routines. Both A. J. Sowell, History of Fort Bend County and Clarence Wharton History of Fort Bend County were much more useful than the Brazoria County history. Sowell not only dealt with the convict lease system as it operated in Fort Bend County, but also covered the effects of the storm of 1900 on cane production.

Various aspects of the sugar cane industry are dealt with separately in numerous sources. Ulrich B. Phillips discusses plantation routines and techniques on sugar plantations in American Negro Slavery (New York, 1919), Life and Labor in the Old South (Boston, 1929), and Plantation and Frontiers Documents: 1649-1863 (Cleveland, 1909). Life on
Southern sugar estates is discussed well in Walter Prichard, "Routine of a Louisiana Sugar Plantation," *Mississippi Valley Historical Review*, XIV (September, 1929). An extremely useful article on how sugar was financed and marketed is J. Carlyle Sitterson, "Financing and Marketing the Sugar Crop of the Old South," *Journal of Southern History*, X (May, 1944).


The sugar industry in Texas was virtually nonexistent in the period following the Civil War. An interesting work on the Southern cane industry during and after the war is Charles Roland, *Louisiana Sugar Plantations During the American Civil War* (Leiden, 1959). Walter Prichard, "Effects of the Civil War on the Louisiana Sugar Industry," *Journal of Southern History*, V (August, 1939) is a concise, systematic presentation of the most important effects of the war. These effects are also relevant to the Texas industry. The two studies of reconstruction in Texas, Charles Ramsdell, *Reconstruction in*
Texas (New York, 1910) and W. C. Nunn, Texas Under the
Carpetbaggers (Austin, 1932), contain only limited material
on the cane industry during the war period. These two works
are much more valuable for their descriptions of Texas plan-
tations after the war and for the analyses of the labor
problem in the postwar period.