

SUGAR-MAKING IN LOUISIANA.



THE beginnings of the sugar industry in Louisiana are somewhat obscure. Even Gayarré fails to trace them definitely in his faithful and picturesque history of the State. There is a tradition that the Jesuit Fathers introduced the cane from San Domingo in 1751 and planted it on ground now occupied by the banks and chief commercial houses of New Orleans, just north of Canal street. The juicy plant was afterwards cultivated in a small way for syrup, but attempts to make sugar were not successful down to 1795. No dependence could be placed on the juice to granulate, and after numerous experiments had failed, the planters came to the discouraging conclusion that the climate of the Mississippi delta had an unfavorable influence on the cane. The man who finally dispelled this delusion and showed the way to the development of sugar-making into a great industry on the rich lowlands of Louisiana was Etienne de Boré. A striking character was this De Boré. He was born in what was known in the last century as the Illinois district of Louisiana, a region with vague boundaries which embraced the whole valley of the upper Mississippi. When he was four years old his parents took him back to France, and growing there to manhood, he became a member of King Louis' mousquetaire guard, a royal household troop to which only nobles could belong, and in which every private soldier had the rank and pay of captain, while the commander was a lieutenant-general. Etienne de Boré might have continued to parade at Versailles until death or the revolution had cut him off, had he not fallen in love with a daughter of Destrehan, ex-treasurer of Louisiana. His wooing prospered, and he married the girl in 1771. She received as part of her dowry an estate described as lying on the left bank of the Mississippi six miles above New Orleans. The ground is now covered by the suburb of Carrollton and by the park in which were held the exhibitions of 1884-85 and 1885-86. Soon after his marriage the gallant mousquetaire put off his uniform, and leaving the gayeties of the court forever, took ship for America with his wife, and converted himself into a plain colonial planter struggling with the problem, then a life-and-death one for Louisiana,

of finding some crop that could profitably be raised on the fat, reeking soil redeemed by embankments from the overflow of the great river. He tried indigo, like many others, and failed. Cotton did not thrive save on the then scarcely known uplands north of Red River; Indian corn furnished a bread-stuff for house use, but had no export value. De Boré saw his hopes blasted and his family threatened with poverty. In his extremity he determined to renew the abandoned effort to manufacture sugar. His wife warned him that her father had in former years experimented with the cane and failed; she begged him not to hazard the little they had left in a hopeless undertaking. His friends, too, croaked disaster. Fortunately, De Boré was no irresolute dreamer. Nothing could shake his determination. In 1794 he planted a small crop, and using all the canes for a second planting, in 1795 he actually made a quantity of sugar so large that he sold it for twelve thousand dollars.

His grandson Charles Gayarré relates in his history of Louisiana that on the day when the grinding of the cane was to begin, large numbers of the most respectable inhabitants gathered at the sugar-house to witness the success or failure of the experiment. Would the syrup granulate? Would it be converted into sugar? "When the critical moment came," says Gayarré, "the stillness of death came among them, each one holding his breath and feeling that it was a matter of ruin or prosperity for them all. Suddenly the sugar-maker cried out with exultation, 'It granulates!' and the crowd repeated, 'It granulates!' Inside and outside of the building one could have heard the wonderful tidings flying from mouth to mouth, and dying in the distance, as if a hundred glad echoes were telling it to one another." A notable man indeed was this De Boré, the reader must agree, and well deserving of a place in history. When Governor Claiborne took possession of ceded Louisiana for the American Government, he appointed Captain De Boré mayor of New Orleans, as the best man to reconcile the Creole population with the new state of affairs.

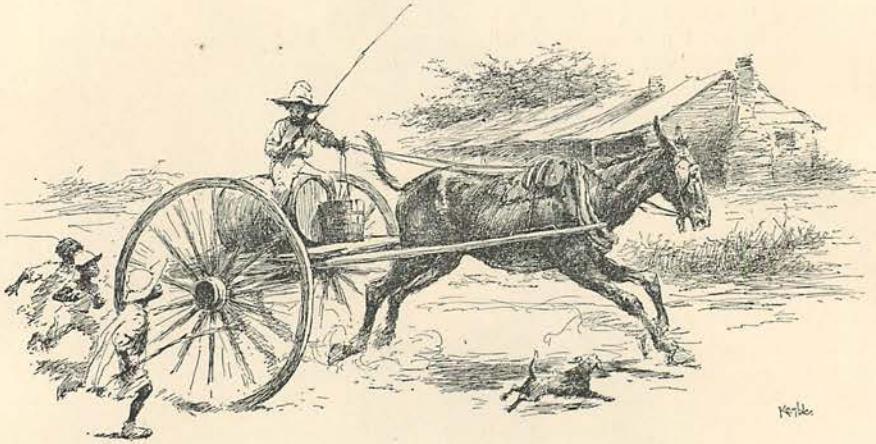
Probably no important industry in this country — certainly none based directly upon the tillage of the soil — has suffered such vicissitudes as that of making sugar from the cane. The causes of these vicissitudes are two,—



A GANG-DRIVER.

first, the absolute dependence of the industry upon a protective tariff; and second, the fact that the total product of cane sugar in the United States is but a drop in the bucket of the aggregate sugar-product of the world.

There is a small sugar district on the lower Brazos, in Texas, and a few plantations in Alabama and Florida, but the estimated product of all districts outside of Louisiana, is only 14,000,000 pounds a year. Now let us look



THE PLANTATION WATERING-CART.

Thus while subject to all the fluctuations of foreign markets, this product exercises no appreciable effect in determining prices. If the Louisiana crop should be a total failure this year, the price of sugar throughout the civilized world would not thereby be increased a fraction of a cent per pound. The Louisiana planter can look for no compensation for a short crop in higher prices. His contribution to the general demand for sweets is relatively a very small one. All the cane sugar made in the United States during the year 1884 was 301,712,230 pounds, while we imported during the same year a total of 2,641,258,139 pounds. Thus the home cane-growers only supplied about one-ninth of the demand. If they should go out of the business at once by common accord, our grocers' bills would not apprise us of the change, for foreign sugars would immediately fill the gap in the market.

We Americans are the greatest sugar-eating people in the world, and our consumption is constantly increasing. It has almost doubled since 1867, and is now, including all kinds of sweets except glucose and honey, fifty-six pounds a year per capita of the population. Yet our domestic sugar-product is not increasing. It reached the highest point in 1861, and has never since approached the figures of that year. Let me say before we get further into the subject, that the Louisiana product of cane sugar is practically the national product.

at the following table of the annual product of Louisiana in hogsheads, to get an idea of the great fluctuations the industry has undergone.

<i>Crop of</i>	<i>Hhds.</i>	<i>Crop of</i>	<i>Hhds.</i>
1884.....	170,431	1854.....	346,635
1883.....	221,515	1853.....	449,324
1882.....	241,220	1852.....	321,934
1881.....	122,982	1851.....	237,547
1880.....	218,314	1850.....	211,201
1879.....	169,972	1849.....	247,923
1878.....	213,221	1848.....	220,000
1877.....	127,753	1847.....	240,000
1876.....	169,331	1846.....	140,000
1875.....	144,146	1845.....	186,000
1874.....	116,867	1844.....	200,000
1873.....	89,498	1843.....	100,000
1872.....	108,520	1842.....	140,000
1871.....	128,461	1841.....	90,000
1870.....	144,881	1840.....	87,000
1869.....	87,090	1839.....	115,000
1868.....	84,256	1838.....	70,000
1867.....	37,947	1837.....	65,000
1866.....	41,000	1836.....	70,000
1865.....	18,070	1835.....	30,000
1864.....	10,387	1834.....	100,000
1863.....	76,800	1833.....	75,000
1862 (no data).		1832.....	70,000
1861.....	459,419	1820.....	48,000
1860.....	228,753	1828.....	88,000
1859.....	221,840	1827.....	71,000
1858.....	362,296	1826.....	45,000
1857.....	279,697	1825.....	30,000
1856.....	73,296	1824.....	32,000
1855.....	231,427	1823.....	30,000

Some of the fluctuations observed in the above table were occasioned by unfavorable seasons; others by the effect of tariff legisla-

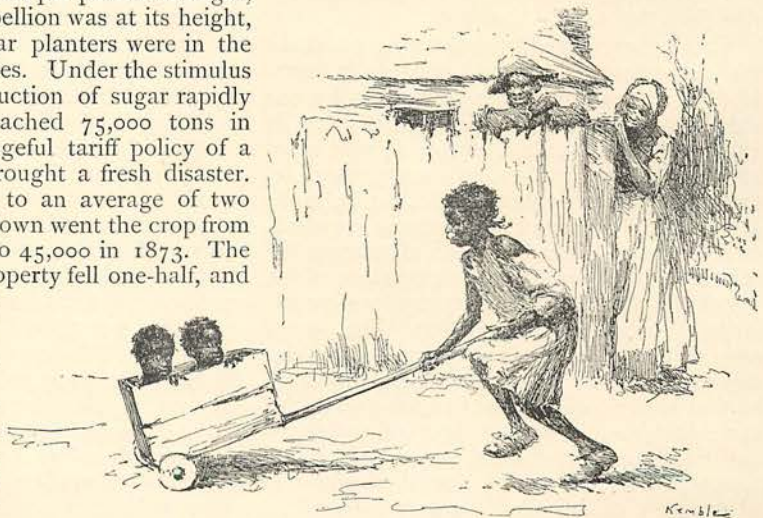
tion. It will be seen that there was on the whole a steady progress until 1833. This was due to the Clay Tariff of 1816, which levied a duty of 3 cents per pound on foreign sugars. In 1832 the duty was reduced to $2\frac{1}{2}$ cents, and this blow was so severely felt that, of 700 plantations worked in 1833, 166 were abandoned during the ensuing 4 years' operation of the new tariff. The industry revived and enjoyed a period of great prosperity, which culminated in the Civil War. This period was the golden age of Louisiana, and the older people always speak of it with a sigh of regret. It was then that the Louisiana sugar-planters became the most cultivated, proud, and luxurious class in all the South. Their great white mansions, standing in groves of magnolias and orange-trees, on the shores of rivers and bayous, were the scenes of a lavishly generous hospitality. The wealth drawn from the soil by the slave labor under their control was poured into the lap of New Orleans with liberal hand, and made of that city a place of great commercial activities, and at the same time a social and intellectual capital whose influence was felt throughout the Gulf States.

The war changed all that. The slave-labor system, on which the sugar industry rested, was destroyed. Hostile armies ravaged the sugar districts. Houses were burned, mills destroyed, and the cane-fields grew up to weeds. In 1864 only five thousand tons of sugar were made in Louisiana. With the return of peace, however, the planters, always a peculiarly intelligent and enterprising class, courageously set to work to rebuild their broken fortunes. They were greatly aided by the tariff of 1864, by which Congress generously accorded a protective duty of three cents per pound on sugar, at a time when the rebellion was at its height, and nearly all the sugar planters were in the ranks of the rebel armies. Under the stimulus of this tariff, the production of sugar rapidly increased, until it reached 75,000 tons in 1870. Then the changeful tariff policy of a changeful Congress brought a fresh disaster. Down went the duty to an average of two cents per pound, and down went the crop from 75,000 tons in 1870 to 45,000 in 1873. The value of plantation property fell one-half, and two-thirds of the sugar commission houses of New Orleans went into bankruptcy.

In 1875 the duty was advanced to an average of $2\frac{1}{2}$ cents, and the production increased to 110,000 tons in 1880, 120,000

in 1882, and 128,000 in 1884. But now arose a new menace to the much-vexed industry. The German Government stimulated the production of beet-sugar by a law which in effect gave a large bounty on all sugar exported. The beets were taxed at the rate of 16 marks per 1000 kilograms, and a drawback of 20.80 marks given on each 100 kilograms of sugar exported. Now, as 1000 kilograms of beets will produce 100 kilograms of sugar, the bounty on the sugar exported amounted to 4.80 marks per kilogram. An enormous increase of the German output resulted. It went up from 644,775 tons in 1881-82, to 1,150,000 tons in 1884-85. A very large part of this increased production was thrown upon the American market. Our importations of European beet-sugar in 1884 were double those of 1883, and twelvefold what they were in 1882. The price of sugar fell so low that the Louisiana planter, even with the $2\frac{1}{2}$ cents duty in his favor, could only save himself from actual loss on his crop by practicing the closest economies in its production. Many of the Cuban planters were ruined. It is said that, after paying freight, brokerage, and other expenses connected with marketing their crops, there remained to the Cuban only about a cent a pound to meet the cost of producing it.

At the date this article is written (March, 1886) the situation is improving. A reaction has followed the artificial stimulus given to beet-sugar making by government bounties. Besides, the German law soon expires by limitation, and the beet-sugar producers will be thrown back upon the old law, not so favorable to exporting. In Louisiana the planters feel renewed confidence, believing that the



IN THE QUARTERS.



A PLANTER.

worst of their struggle with beet-sugar is over and that they have a fair chance for moderately profitable operations in future, if Congress will not diminish the advantage they now derive from the tariff.

The seeker after information concerning the cane-sugar industry in Louisiana is astonished at the outset of his researches by the significant fact that the acreage planted in cane has not increased during the past quarter of a century, but has, on the contrary, decreased. This is a statement that can be made of no other important agricultural crop produced in the United States. It cannot be said that it is due to the destruction of the system of slave labor, nor to any local peculiarity of climate or population. The cotton crop of the State has increased; so has the rice crop, which is cultivated on the same kind of land which grows the cane and in the same parishes. It is true that cane planting and grinding require a stricter and more systematic labor organization than raising cotton or rice, but experienced planters now get as good results per acre with free labor as they

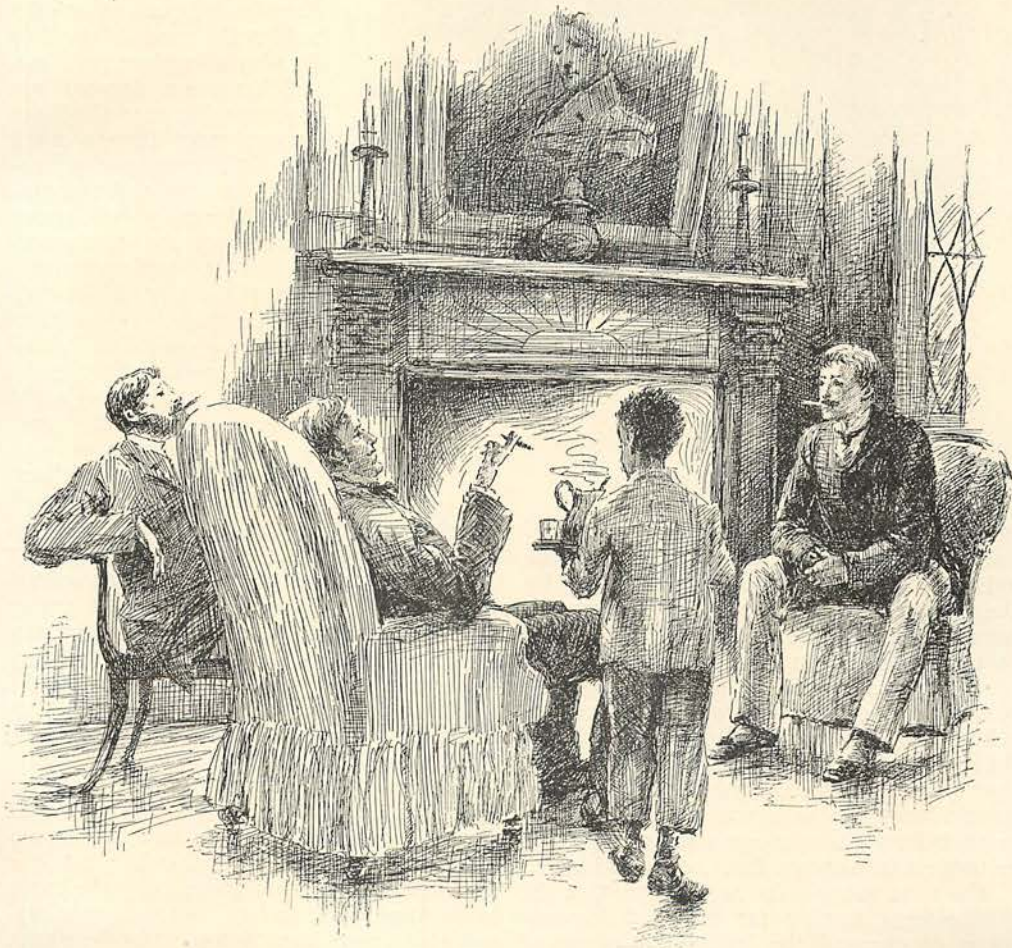
formerly did with slave. Mr. John Dymond, one of the largest planters in the State and one of the best-informed men on all matters concerning the sugar industry, says that Louisiana has the capacity economically to produce 500,000 tons of sugar a year, which is about four times her present production. Then why does not the annual product increase with the rapidly increasing consumption of sugar? The reason is that the sugar-planter stands on quite a different footing from the cotton-planter or the wheat-farmer. He must produce his staple in competition with the slave, coolie, peon, and other low grades of labor employed in its culture in other countries. He could not produce it at all save for the heavy tax on imported sugars levied by our tariff schedules. He can feel no certainty that this tax will not be varied to his serious detriment, if not to his absolute ruin, at any meeting of Congress.

Consequently he is not willing to take the risk of opening new plantations or enlarging old ones. In fact he only continues in the business because he knows of no other way to utilize his fertile acres. Making sugar is his trade. He loves it and is unwilling to abandon it. Its very uncertainty has a fascination for him. Besides, it combines manufacturing with agriculture, and thus develops intellectual faculties not much called into play in ordinary farming. The planter must have the machinery and appliances for grinding the cane and converting the juice into sugar and molasses, and must understand their economical use. If he is unskillful, his product will not bring as much into one or two cents per pound as that of his skillful neighbor. To be successful he must also understand the management of labor, the purchase of supplies, the marketing of his product, and the diking and draining of his land. He must, therefore, be farmer, manufacturer, merchant, and civil engineer combined. I have said that the sugar-planters of Louisiana are a peculiarly intelligent class. They could not

be otherwise without going to the wall. It is not a business for dull, unprogressive men. These planters have an association which supports an experimental farm, where new varieties of cane are raised, new machinery tried, and the best scientific knowledge put into practice. They are a force in the politics of the State strong enough to defeat, recently, for reëlection a United States senator, because he was willing to uphold the sugar tariff as a revenue tariff only, and not as a tariff based on the principle of protection. The planters saw that if there was to be no principle of national policy underlying the sugar duty they were liable at any time to be ruined by the reduction of the duty to a point where it would yield the most revenue. Evidently, they said, the duty would produce more money to the Treasury if placed just below the figure which would enable the Louisiana planter to compete with foreign sugars.

The reader who has no interest in sugar

other than as a consumer, will, I apprehend, be ready by this time to ask whether it is worth while to maintain by a high protective tariff an industry not indigenous and not capable, after nearly a hundred years of existence, of standing alone. Now let us hear the planter's argument for a protective tariff on his product. First, he says that cane-growing is not a forced and unnatural industry. The cane is not indigenous in this country, but neither is wheat nor oats nor cotton. There is no greater danger of frost injuring the cane crop of Louisiana than there is of its injuring the corn crop of Illinois. After a century of cultivation the cane may well claim to be a fully naturalized crop. Second, he argues that no tax by which money is raised to support the Federal Government is fairer or less onerous than the tariff on sugar. The rich use the most sugar and thus pay the heaviest tax per capita, but all pay something, as is just, because all are protected and benefited by the Government. In



THE PLANTER'S HOME.

fact the sugar tariff is the only natural tax which is distributed over the whole body of the population. The annual consumption of raw sugar in this country is about 56 pounds per capita of the population. At an average

assumed a certain responsibility in the premises which it cannot honestly throw off. In other words, it has no right to ruin a large class of its citizens who have placed confidence in the continuance of a policy long since become settled and traditional. It is in honor bound, say the planters, either to maintain a duty on foreign sugars at a point high enough to enable them to compete with such sugars in our home markets, or to compensate them for the losses which would result from the abandonment of the protective policy.

Finally they draw an affecting picture of the ruin and desolation that would come upon the richest districts of Louisiana if the sugar interests should be destroyed. There is only one other crop besides the cane adapted to the alluvial lands of the State, and that is rice. It would not be practicable or profitable to convert more than a small part of the area now cultivated in cane into rice plantations. Rice can only be grown where there are economical facilities for flooding the land. The greater part of the agricultural area below Red River would be abandoned if cane-planting could no longer be carried on. The levees could not be kept up, and the country would become a swampy wilderness. New Orleans would be ruined as a commercial



IN THE FRENCH MARKET.

of $2\frac{1}{2}$ cents per pound duty, the increased cost by reason of the tariff is \$1.40 per individual. The duty paid on foreign sugars for the year ending June 30th, 1884, was in round numbers \$48,000,000, and the benefit derived by the Louisiana planters from the duty was about \$7,000,000. At the same time the planters of the Sandwich Islands received, in effect, a bounty from our Government of over \$3,000,000 by the admission of their sugar duty free. Thus the United States practically gave nearly half as much to aid the cane-sugar industry in a foreign country as it did to foster it in our own State of Louisiana.

The next point in the argument is that the Government, having for nearly a hundred years encouraged the investment of capital in sugar-planting by a protective tariff, has

plunged into poverty and misery, and many thousands of people would die from starvation. In time the negroes who might survive the calamity would make shift to live by raising corn and potatoes on lands not requiring levee protection; but nothing could restore the former prosperity of the lowlands: they would fall into a condition of semi-barbarism, like the coast districts of Central America.

The area of land now cultivated in cane, in Louisiana, is about 170,000 acres. It is no greater than is embraced in an average prairie county in Dakota or Nebraska; but it is stretched out in narrow strips along the banks of the Mississippi, and of the numerous bayous, which serve as escape-pipes for the waters of the great rivers, and in reality comprises

more than half the tillable soil in the lower half of the State. While a wheat-raising county in the North-west supports only 10,000 or 15,000 people at the most, this sugar country supports half the population of Louisiana. On the plantations it maintains 300,000 souls; and it is but a moderate estimate, to say that there are 150,000 more supported by transportation and the manufacture and sale of supplies used upon the plantations. An acre of wheat does not, on the average, produce more than \$15; an acre of cotton will not average \$30; but an acre of cane turns out a product in sugar and molasses which at the present low prices will bring from \$75 to \$100.

No important product of our national industry, with the possible exception of iron, has suffered such a fall in value in recent years as sugar. The grade of sugar which in 1869 sold in New Orleans for 15¼ cents per pound, sold in the same city in 1884 for 4½ cents. It is wonderful that the planting interest managed to resist annihilation under such disastrous conditions. That it still survives is an evidence of the courage and energy of the men engaged in it, and of its inherent vitality. The Louisiana planters have increased the yield of cane by better tillage and the introduction of new varieties, and at the same time have increased the yield of sugar per ton of cane by greater care in the manufacturing processes and by the use of improved machinery. Labor, which is 70 per cent. of the expense of producing sugar, costs them as much, and in most plantations more, than in 1869. They still believe, however, that the country has the capacity of furnishing all the sweets consumed by its people, and think it would do so in two or three decades if a uniform and perma-

nent tariff policy were adopted by Congress, and if there should be no efforts on the part of the Government to bring in Mexican, West Indian, and Hawaiian sugars free, under the operations of special commercial treaties. Why, they ask, should our statesmen be willing to destroy a home industry, now producing \$20,000,000 a year, for the sake of securing \$8,000,000 or \$10,000,000 of foreign trade? Our interstate trade is more valuable than any foreign trade. Louisiana now buys with the money her sugar brings more food products, manufactured goods, than Mexico and the West Indies combined. If all her alluvial lands were cultivated, and also the much greater area in Texas favorable to cane-growing, the sugar interest would develop a commerce of \$200,000,000, most of which would go to the Northern States for clothing, machinery, coal, grain, and cured meats.

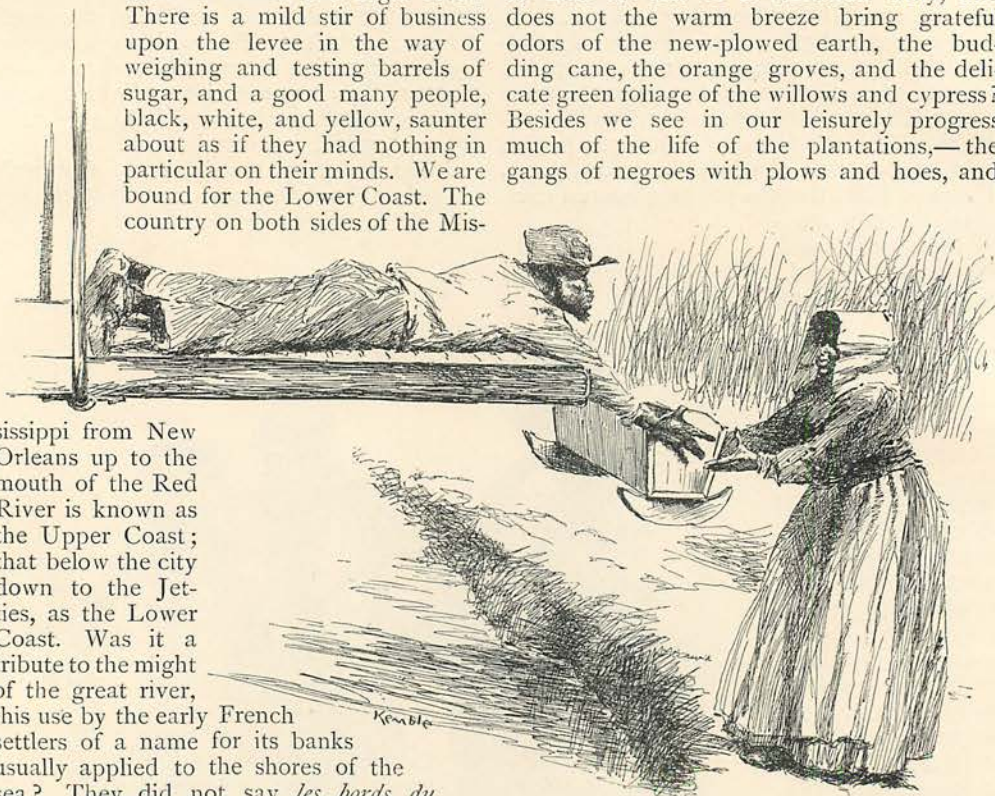
If the reader has now in mind a few cardinal points about the cane-sugar industry and



CAPTAIN, MATE, AND CLERK OF THE "ALVIN."

its relations to the general government, let us go on board one of the sugar-boats that carry supplies to the plantations on rivers and bayous and bring the crops to New Orleans. The artist and the writer thread their way through the French market with its polyglot chatter, its fragrant coffee-stands, and its queer medley of meats and calicoes, fish, oranges, and toys, and passing the open many-gabled sugar-sheds, come out on the broad levee. A group of steam-boats lie with their noses against the bank. These are the sugar-boats, and this particular portion of the city's great protecting embankment is called the sugar levee.

There is a mild stir of business upon the levee in the way of weighing and testing barrels of sugar, and a good many people, black, white, and yellow, saunter about as if they had nothing in particular on their minds. We are bound for the Lower Coast. The country on both sides of the Mis-

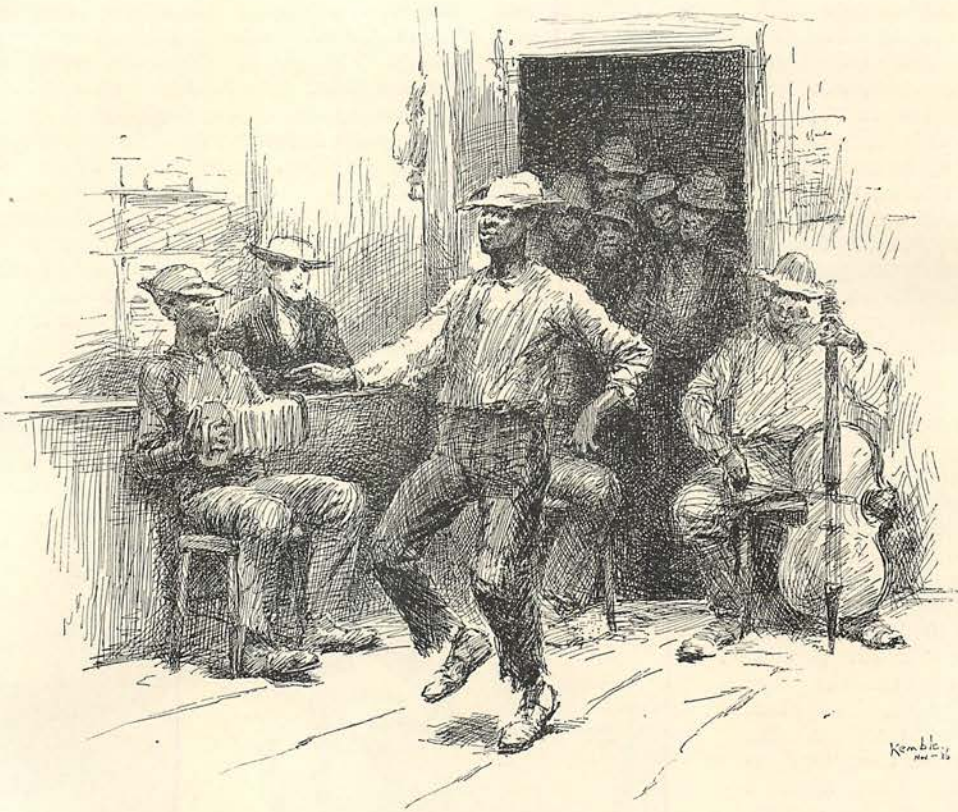


UNLOADING THE CRADLE.

issippi from New Orleans up to the mouth of the Red River is known as the Upper Coast; that below the city down to the Jetties, as the Lower Coast. Was it a tribute to the might of the great river, this use by the early French settlers of a name for its banks usually applied to the shores of the sea? They did not say *les bords du Mississippi*, as they would say *les bords du Seine*, but always *les côtes du Mississippi*. We make choice between the *Daisy*, a preposterously small and dirty boat, which carries the mail, and is therefore bound to make good time, and a large and reputable looking craft called the *Alvin*, which transports freight and stops at every plantation named on her manifest, preferring the latter. She does not start until an hour after her advertised time of leaving. Nobody grumbles or seems to think this extraordinary. It is the way of the country. Captain, mate, and clerk stand at the shore end of the long landing-stage, chatting and laughing, while keeping a desultory outlook for a belated passenger or dray-load

of freight. Finally the *Alvin* backs out from between the other boats and begins a *voyage en zigzag*, crossing and recrossing the river more times than any one cares to keep account of, to land at plantations on one bank and the other. Every time the boat lands she must make a great circle so as to get her bows against the rushing yellow current. A great deal more space is traversed in these zigzags and curves than in a direct line down the river, so that we are all the afternoon making twenty-eight miles. But what matter? Is not the February air as mild as that of a Northern May, and does not the warm breeze bring grateful odors of the new-plowed earth, the budding cane, the orange groves, and the delicate green foliage of the willows and cypress? Besides we see in our leisurely progress much of the life of the plantations,—the gangs of negroes with plows and hoes, and

the great cane-carts carrying the plant cane to the freshly tilled fields. Our boat is a traveling storehouse of curiously mixed merchandise. At one plantation we put off a consignment of crackers, at another a baby's cradle, at another a mule. Before the bows touch the bank a row of roustabouts stand on the plank, one with a barrel, another with a bag of fertilizer, a third with a box or bale—eight or ten of them ready to rush ashore. The moment the last article is landed, the mate shouts "get aboard" and "hoist away," and up goes the great plank into the air while the crew comes running in.



IN THE STORE.

At night the landing scenes are still more picturesque. The electric headlight suddenly irradiates a few rods of the levee, causing a negro cabin, the colonnaded mansion of a planter, or the dingy walls of a sugar-house to flash out of the obscurity for a moment, and then to relapse into the surrounding blackness. The boat feels her way with the light to the landing-places, and when she stops for a few moments, to put a passenger or a box ashore, the illuminated scene on the levee seems to have been conjured out of chaos and black night for our momentary wonder.

We go ashore at Belair, a plantation celebrated for its careful and systematic field work. The planter is waiting upon the levee for his guests. Two negroes seize our portmanteaux, and we are shown the way to an old-fashioned, square house, completely surrounded on all sides and on both floors by broad galleries supported by columns. It stands in perilous proximity to the menacing yellow flood of the river, and the owner explains its need of repairs by saying that as the water is eating into the land in front of it at the rate of seven feet a year, it must soon fall into the stream, which is a hundred feet deep at this

point. He does not, therefore, think it worth while to spend any money on the old structure. After supper we go to the store. The store is usually the center of the business life and of much of the social life of a plantation. It is owned by the planter, who keeps in it a stock of clothing, provisions, and knick-knacks to supply his laborers. A book account is kept with each head of a family, and a settlement made on every weekly or monthly pay-day. We find a score of negro men and boys in the store listening to the music of an accordion, a fiddle, and a triangle, and with some little coaxing and the promise of a quarter to the best dancer we succeed in getting up an amusing competitive double-shuffle and heel-and-toe dance. The contestants, who have been toiling in the fields all day, throw off their coats and get down to the work with evident relish, amid shouts of "Hi! hi!" "Go in, Jim!" "You, dah, Gawge!" and "Let youssef out, Mose!" and clapping of hands on knees from the delighted sable spectators. When the fun begins to get monotonous I manage to have a talk with an intelligent old negro named Squire, who was a "driver" in slave days and is still a "driver" — not of mules, be it under-

stood, but of men. A "driver" is the foreman of a gang of laborers. On some plantations the title of foreman is coming into use, the negroes objecting to the old word. I ask Squire if the field hands do as much work in a day as they did in slave times. "Nuffin like it, boss," he replies; "befo' de wah, de plow gang had to be in de field long befo' sun up, all drawn up in line and ebery man a-hold of his plow, waitin' foh de first daylight to start. And de hoe gang was dah, ebery man a-lean-in' on his hoe, ready to start at de word jist as soon as dey could rightly see de rows of cane."

"If a man did not keep up his row, what did you do?"

"Give him a lick wid de whip. Dat mostly brought him to his senses. Times is not what dey was, boss." The old man evidently regrets the days when his authority as driver enabled him to give a lazy fellow a whipping.

Next morning we are up in good season, but our host has been in the saddle since six, starting the field work for the day. After breakfast we all mount and ride out over the smooth plantation roads to see the gangs at work. The place fronts for three miles on the river, and extends back about a mile to the swamp. There are more than twenty-five miles of roads upon it. About a thousand acres are under cultivation. The great enemy of the planters in all lower Louisiana is water. They must constantly be on their guard against it, throwing up their defenses in front and rear in the form of strong dikes; keeping open with constant labor a checkerboard system of drainage ditches and pumping out into the swamp the water that falls as rain or soaks through from the river. Belair has two protection levees on the swamp side, so that if one is overflowed a defense can be made on the second line. In sugar-culture an enormous amount of labor must be expended in diking and ditching that has no direct result in the production of the crop.

How delightful is a February morning in

these warm lowlands! The atmosphere is like that in Corot's pictures, misty, vague, and dreamy. The gigantic live-oaks seem like ghosts of trees. The figures of men and animals moving across the shrouded fields against the gray sky loom up into strangely exaggerated proportions. A soft breeze blows from the Gulf. The line of faint green on the horizon shows that the cypress-trees in the swamp are beginning to put on their spring colors. Flocks of noisy blackbirds are holding mass meetings on the new-plowed ground and passing resolutions in favor of immediate migration to the North.

Let us follow in their sequence the processes of planting. First is the uncovering with plows of the furrows in which the seed-cane has been



"HOOKING-UP."

buried since last fall, the pulling it out of the ground with great iron hooks attached to poles, and the loading it into carts. In the "hooking-up" gang I observe two white men working with the negroes. They are Spaniards from the *Terre aux Bœufs* country, the other side of the swamps. There are two others who are neither whites nor negroes. They have a

brown complexion, high cheek-bones, regular features, and straight black hair. These are "Manilla men"—natives of the Philippine Islands. The curiously mixed population of lower Louisiana includes two or three thousand of them.

Big stout carts with broad-tired wheels haul the resurrected canes to the field prepared for planting. Here a gang of women called "droppers" take up the canes by armfuls and drop them in heaps at intervals beside the furrows. They are placed in the furrows by other women called "planters." Another gang passes along the furrows and chops up the canes with rude hatchet-like knives. The object of this is to give the weak eyes a chance to draw strength from the stalk which would otherwise be absorbed by those which have already a good start. About six tons of cane go to the planting of an acre. One acre of seed-cane will plant three acres, and as the planting must be done every third year, one-ninth of the crop average of a plantation must be given up to seed-cane. When the seed-cane is cut in the fall, the stalks are laid between the rows of stubble and covered with a plow run on each side.

After the canes are laid and cut, they are covered with plows or with a machine called a rotary hoe, and the ground is then rolled to press the dirt close to the sprouting eyes. The first crop is called plant-cane. Next year the cane sprouts from the stubble, and is called first ratoons. The second year it sprouts again, and is called second ratoons. The third year the stubble is plowed up and the ground sowed with field peas, which recuperates the land, as clover does Northern farms. The fourth year it is again put in plant-cane. A good yield to the acre is 25 tons of plant-cane, 20 of first ratoons, and 15 of second ratoons. On the Upper Coast, above New Orleans, it is customary to let the stubble ratoon but once. In Cuba it often ratoons six successive years, but the cane becomes constantly more woody and poorer in saccharine matter.

In the stubble-fields the first spring, work consists in "barring off," or moving the dirt away from the roots of the cane with plows and hoes, to permit the light and air to hasten



DROPPING AND PLANTING.

the germinating of the ratoons. By the middle of April there should be a good "stand" of the young sprouts. Then the dirt is worked back toward the rows, and there is constant cultivation with the plow till about the 1st of July, when the crop is "laid by." No more work is done on it till the cutting begins in September. Now the cane is so high that a man driving a mule is lost to sight between the rows. Soon it will be tall enough to swallow up a man on horseback. The rows are usually seven feet apart and always run parallel with the ditches—that is, from the river or bayou toward the swamp. July and August was formerly the time for cutting wood in the swamps to run the sugar-mill during the grinding season, but now most plantations burn coal. The crop being "made," the planter feels that he can relax his vigilance, and if he has the means, he goes off to the North with his family to escape the two hottest months of the year in Louisiana and build up his health in a less enervating climate.

The field hands work steadily, but in a rather leisurely way. I am struck by the strong mus-

cular build of many of the men and women and the easy, cheerful way in which they go about their tasks. The women only do field work during the planting and grinding seasons. The rest of the time they look after their simple household duties. There is a good deal of light work on a plantation for the children, so that they become helps to their parents as soon as they are eight or ten years old. The ordinary wage of a man is 75 cents per day, and of a woman 65. But during the cutting and grinding period, which embraces three months of a year, the men earn \$1 to \$1.25 for regular hours and usually make extra pay by overwork. In no part of the South do the negroes seem to be as well off as on the sugar plantations: there is a common saying that it takes fourteen months' work in a year to make a sugar crop. An industrious man can actually earn fourteen months' wages between the 1st of January and the 31st of December. Each family gets a house and a garden-patch rent free, and on many plantations is allowed to keep chickens and pigs. Their fuel is cut in the swamp or picked up from the abundant driftwood cast ashore by the river. The climate is so warm that not much money need be spent for clothes. A thrifty negro family will always manage, however, to have presentable garments for Sunday wear, and the women can usually gratify their love for bright ribbons and cheap flashy jewelry.

We ride back in the rear of the plantation to see the huge drainage-wheel driven by steam, lazily lifting the yellow water from the canal on its broad arms up to the level of the bayou that leads to the swamp. We pass a group of houses inhabited by Spaniards, where moss is drying on the palings and yellow-faced children are tumbling about the doorways,—“Built for tenant farmers who worked ground on shares,” explained the planter, pointing to the cottages, “but the system did not succeed. The tenants were not willing to share the hardships of a bad year, and when they got less money by reason of a short crop, they accused me of cheating them. I now let the cottages to white laborers employed for wages on the place.”

“Is there much white labor seeking employment on sugar estates?”

“More and more every year—principally Germans and Italians. Thrifty people they

are too; very poor when they come from the old country, but soon getting ahead.”

Now the tones of the big plantation-bell are heard across the broad, level fields. All the gangs stop work, and people and animals go trooping to the quarters for dinner, the foreman of each gang going ahead to prevent the men from racing the mules. As we ride homeward, the planter talks of the great part religion plays in the lives of the negroes, and of the survival of old heathen superstitions. Some time ago the negroes took a dislike to the overseer, and sent to the city for a conjurer to come down and “Voodoo” him. The conjurer undertook to rid them of the overseer for \$30, but finally came down in his demand to \$2.50. An investigation showed



CUTTING CANE.

that the only thing he did was to place at night on the doorstep of the overseer's house some white powder with two black hairs crossed upon it. The negroes questioned would not say whether they expected the overseer to die, or only to leave the place. The Voodoo man had merely told them that they would “get shut of him.”

Our next visit was to Magnolia plantation, the sugar estate farthest down the river of



HAULING CANE.

any now worked. Below it all the cultivated land is in small rice-farms.

The Magnolia sugar-house is generally known in Louisiana as having the best machinery and all the new processes. It is not much imitated, for two reasons: First, the conservatism of the older class of planters, which leads them to stick to the methods they understand, and second, the fact that the business of sugar-making has not been sufficiently profitable in recent years to enable planters of moderate capital to purchase new apparatus. They are obliged to hold on to their old pans and kettles, for want of money to buy new. Let us now go into the great irregular brick building, with its three tower-like chimneys and its general big-factory air, which contains the sugar-making plant, promising at the start to go through hastily, and not to bore the reader with details about machinery, or with the fine scientific points of the business. A sugar-planter will talk to you by the hour, about percentages of sucrose, and glucose, inverted crystallization, degrees of vacuum, and polariscope tests, until your brain takes in only a confusion of words and figures. First the owner of "Magnolia" calls attention to his bagasse-burner, which makes more than half the steam used to run the mill. Formerly the bagasse, which is the cane after it has parted with as much of its juice as the mill will extract, was either burned in a furnace to get rid of it, or thrown out on the levee to help fight off the river from eating away the bank. Now every economically managed mill burns it to make steam, by the aid of the draught of an enormous chimney. The best method

is to burn it on grates, under which air is forced by a blower.

The canes, hauled in the big carts from the fields, are dumped upon an endless band and carried into the mill, usually direct to the big iron rollers, but at Magnolia first to a "shredder." There are only two shredders in the State, the machine being a new invention. Its revolving teeth chew up the cane into pulp. The pulp and juice fall upon a rubber apron which carries them to the mill; grinding is simply squeezing between three or four sets of iron rollers. Now the juice runs in a trough to a strainer, where a woman gathers up now and then the shreds of cane remaining and takes them back to the mill. Next the juice is pumped into an iron cylinder called the "juice-heater," and heated with exhaust steam to 190°. This is a new process, not much in use. Next it runs into the clarifiers or defecators, which are large iron vats with rows of steam pipes at the bottom. Here slacked quicklime is added, which brings to the top all impurities, to be skimmed off into a division of the pan at the end. The juice is then boiled and "brushed" with a long paddle until the bubbles become white, when it is allowed to settle for fifteen minutes. There is a side operation for saving the sugar in the skimmings by putting them through filter presses.

In the advanced process at Magnolia the juice next goes through bone-black filters instead of to the ordinary settling-tanks, to settle for six or seven hours. A filter is a big iron drum containing ten thousand pounds of animal bone-black. The "char" must be washed with

hot water every two days and dried in a kiln. After filtering, the juice, still thin as when first pressed from the cane, goes to the "double effects." This is a new apparatus, resembling two upright boilers of a portable engine. Each cupola-like machine contains five hundred tubes in which the juice is boiled in a vacuum by exhaust steam. The usual plan is to boil in an open cylindrical pan, having coils of steam pipe at the bottom. Now the juice goes to fresh filters and next to the vacuum-pan, which is not a pan, but a big iron cupola-shaped cylinder, with an apparatus for exhausting

iron pan in which steel arms revolve. Next the "masse cuite" falls into the "centrifugals," which are small drums holding about 120 pounds of sugar. Within the drum is a wire screen basket revolving at the rate of 1600 turns per minute. The centrifugal force throws out the molasses through the wire network and leaves the sugar. Perfectly clear water is then spurted into the drum from a syringe. This water is thrown out through the sugar, washing out the remaining coloring matter. The motion of the centrifugal is now stopped and the sugar let out of a trap in the bottom



MAKING THE SUGAR.

the air and multitudinous coils of steam pipe. This is the process requiring most skill. The chief sugar-maker attends to it himself, watching his vacuum-gauge and thermometer carefully, and testing every few minutes his boiling mass by drawing out a tube which does not break the vacuum. He seeks to keep the temperature down to 130°. If it is too high some of the sucrose will "invert" or "caramel" into glucose, and the proportion of sugar will be lessened. First, he fills the pan only in part. Then when he sees fine granulations of sugar against the light in his test-tube, he admits more juice, and thus builds up the grains little by little to larger size. When sufficiently boiled, the thick syrup is called the "masse cuite." The "strike" is now done, air is admitted to the pan, and the contents are run off into the "mixer,"—a huge oblong

into a screw conveyer, from which a bucket band carries it to a big bin. A man stands in the bin and shovels the sugar, as if it were wheat, into a tube under which the barrels are placed one by one to receive it.

This first product of the sugar-mill is called "firsts," and is the whitest and best sugar. The molasses is boiled again in the vacuum-pan, goes again through the centrifugals, and a light-brown sugar called "seconds" results. Yet again the remaining molasses goes through the pans, but the "masse cuite" is now sticky and stringy, and will not yield its sugar to the centrifugals. It is put into iron tanks on wheels, called "wagons," each of which holds about 2500 pounds, and wheeled into the hot-room. The temperature here is from 90° to 100°. Here the wagons stand in closely packed rows for thirty days. The mass is now

very stiff and waxy. It is next thrown into the boiler, stirred up well and put into the centrifugals, with cold water, which washes out the molasses. The final remainder of sugar is called "thirds," and is of a dark-brown color. The separated molasses is of a very poor quality, and sells for only about thirteen cents a gallon. Distillers use it to make alcohol, and the glucose manufacturers buy it to give a cane-flavor to their glucose syrup.

By the improved processes I have thus described about 78 per cent. of the weight of the cane is extracted in juice, whereas the average extraction in Louisiana is only about 63 per cent. The best five roller-mills get about 70 per cent., the additional 8 per cent. being due to the use of the shredder. The new processes give about 160 pounds of sugar from a ton of cane, the average of the State being only 100 pounds. In 1885 Magnolia plantation averaged 163 pounds from a ton of cane. The sucrose of the crop of 1885 was about 11 per cent. less than that of 1884, but the sugar yield was increased 6 pounds to the ton of cane by improved manufacture. To some extent the low amount of sugar produced by old methods is compensated for by the greater amount and better quality of the molasses, but as molasses is worth only 2 cents a pound, when sugar brings from $4\frac{1}{2}$ to 6, there is no possible economy in holding on to the old processes.

A SUGAR plantation is divided by main ditches and roads into sections known in some parishes as "cuts," in others as "strips," and in still others as "blocks." These have names familiar to all the people on the place. At Magnolia they talk of the "Polly Garden Strip," the "Molly Shanty Strip," the "North Front Strip," the "Big Oak Strip," etc. Each of these sections is subdivided by small ditches into fields containing an average of about twenty-five acres. Every well-managed plantation is carefully mapped, and the planter, running his eye over the map in his office, will tell you just what fields are in plant-cane, in stubble-cane, or in cow-peas. He plans his operations on his map as a general does a campaign. It is a stirring, fascinating business, which keeps a man on the alert, mentally and physically, and develops the most intelligent type of the country gentleman to be found in the South.



WASH-DAY IN THE QUARTERS.

The cane-cutting season begins the 1st of October. It would be advantageous to wait longer, for the canes are constantly sweetening their juices, but there is danger that the crop may not all be harvested before the frosts come. In Cuba, where there is no frost, the planter can continue to cut and grind until the new sap begins to flow in the stalks. Not infrequently it happens that a Louisiana planter raises more cane than he can work up in his mill before the cold weather of January sets in. The next year he reduces his acreage. The amount of land he can cultivate must depend on the capacity of his mill.

A great deal of sugar is still made in Louisiana by the old open-kettle process, wasteful as it is, for the simple reason that the planters cannot afford to buy new apparatus. This old process is substantially the same as was in use at the beginning of the century. Five or six big cast-iron kettles of graduated size are arranged in line over a brick furnace. At one end is the fire of cypress wood; at the other the tall chimney. The cane-juice runs into

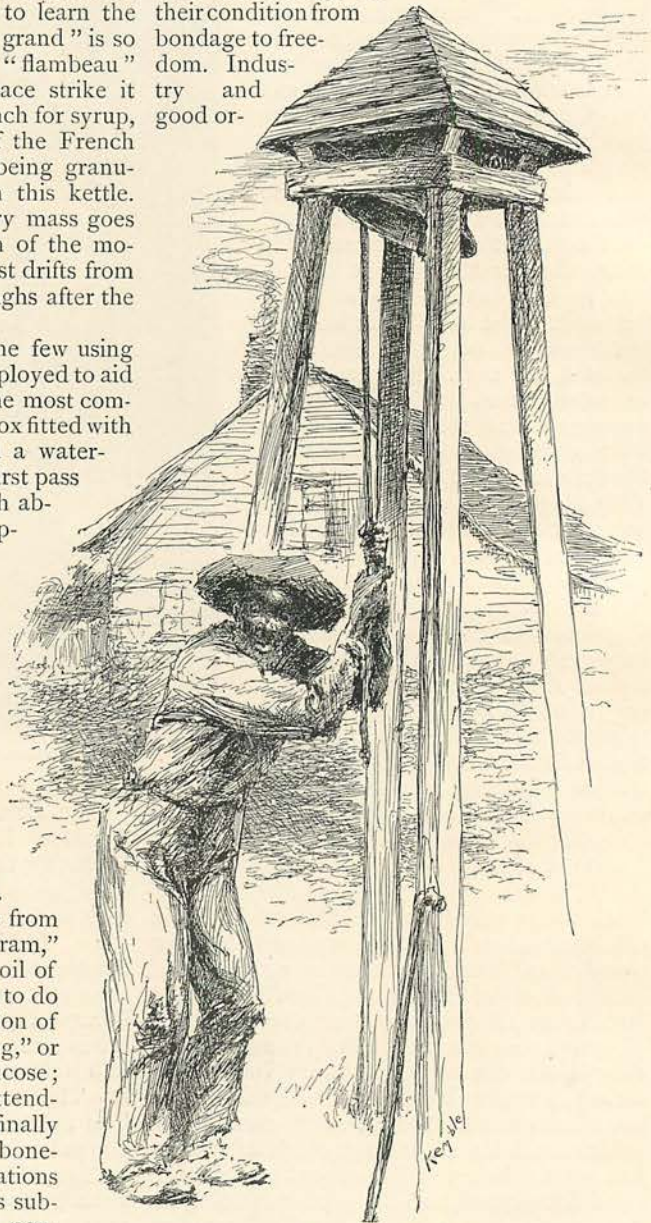
the largest kettle, called "the grand," which is farthest from the fire, and in the course of the boiling is ladled successively into the others, called, in order, "the prop" or "proy," "the flambeau," the "sirop," and "the battery." Often there are six kettles, a first and a second "grand." I have not been able to learn the derivation of the "prop." The "grand" is so called because of its size, the "flambeau" because the flames of the furnace strike it with most force; "sirop" is French for syrup, and "battery" is a corruption of the French word *bâtir*, to build, the syrup being granulated or built up into sugar in this kettle. From the battery the thick sugary mass goes to wooden tanks to cool. Much of the molasses is here drained off. The rest drifts from the hogsheads placed above troughs after the sugar is packed.

In all sugar-houses, except the few using bone-black, sulphur fumes are employed to aid the lime process in clarifying. The most common apparatus is a large wooden box fitted with numerous shelves, a retort, and a water-tank. The fumes of the sulphur first pass over the water in the tank, which absorbs the sulphuric acid and is supposed to leave only sulphurous gas to go up into the box, and mingle with the cane-juice which drips from shelf to shelf. To produce a draught there is a steam-exhaust apparatus above. The juice next goes to the clarifiers to be mingled with lime. Here the vegetable albumen is coagulated and rises in a scum called the "blanket," which is skimmed off, the mineral constituents of the juice falling to the bottom of the pans.

Next in order in the advance from the old open kettles is the "steam tram," which is a series of vats with a coil of steam pipe at the bottom of each to do the boiling without the direct action of fire, and thus prevent "carameling," or the inversion of sucrose into glucose; next is the vacuum-pan with its attendant centrifugal machines, and finally the "double effects" and the bone-black apparatus. On a few plantations the high-grade centrifugal sugar is subjected to a drying process, and converted into "plantation granulated."

At Southdown plantation in Terrebonne parish, I found a good example of an estate and sugar-house of the first class, not employing, however, the exceptionally advanced appliances. The lands embraced in the horse-shoe bend of a bayou were originally cleared

by the father of the present owner, and most of the laborers were formerly slaves or are the children of slaves born upon the place. Their docility and attachment to the family of the proprietor seem to have been little changed with the change in their condition from bondage to freedom. Industry and good or-



THE PLANTATION-BELL.

der are secured by their dread of being discharged and thus compelled to leave the old plantation. Their local attachments are very strong. Their whitewashed cabins, each with its piazza fronting upon a street shaded with live-oaks, are as dear to them as is the "big house"

to the "boss." To the "big house," as they call the residence of the planter, they resort for medicine and advice in case of illness and for kindly counsel and assistance in trouble.

The relations between employer and employees on a sugar estate are unique. They are the nearest approach in America to a feudal system. Not a foot of land do the laborers own. Yet their right to homes and labor on an estate is a sort of unwritten law, so binding that they are seldom sent away except for very serious cause. They regard the mules and implements of the planter as to some extent their own, using them to cultivate their gardens and to haul their fuel. In directing the plantation work he seldom uses any harsh words of command; talks rather in kindly tones, scolds a little if needs be, but in rather a parental fashion; asks opinions at times from swarthy old "uncles" who have a standing on the place as faithful men and experts in cane-culture; knows the strong and weak points in the character of every man in his employment. Indeed his rule is so mild that a stranger to plantation life wonders how the uncouth mass of black laborers is held together and disciplined so as to produce favorable industrial results.

I must leave the picturesque features of plantation life to the pencil of the artist. Something I would like to say in this regard, and something, too, of the pleasant homes of the planters of the better class, with their portraits of ancestors for a century back on the walls, their old mahogany furniture, their libraries of old books, their bountiful hospitality, the good conversation in front of brass andirons and blazing wood fires, the tea served in old china, "brought from France by our grand-mother," whose portrait by Gilbert Stuart looks benignly down on the scene, the willing, friendly black servitors, the reminiscent tone of much of the talk, referring constantly to the golden age of sugar-planting, which was in the "good old times before the war." But for all this there is no space, and I must close with a few random notes that have not fitted themselves into the foregoing text.

NOTES FROM
A MEMORANDUM-BOOK.

THE heaviest yield of sugar on record was raised in 1882 on a plantation in Jefferson parish, opposite the city of New Orleans. From 50 acres of canes 300,000 pounds of

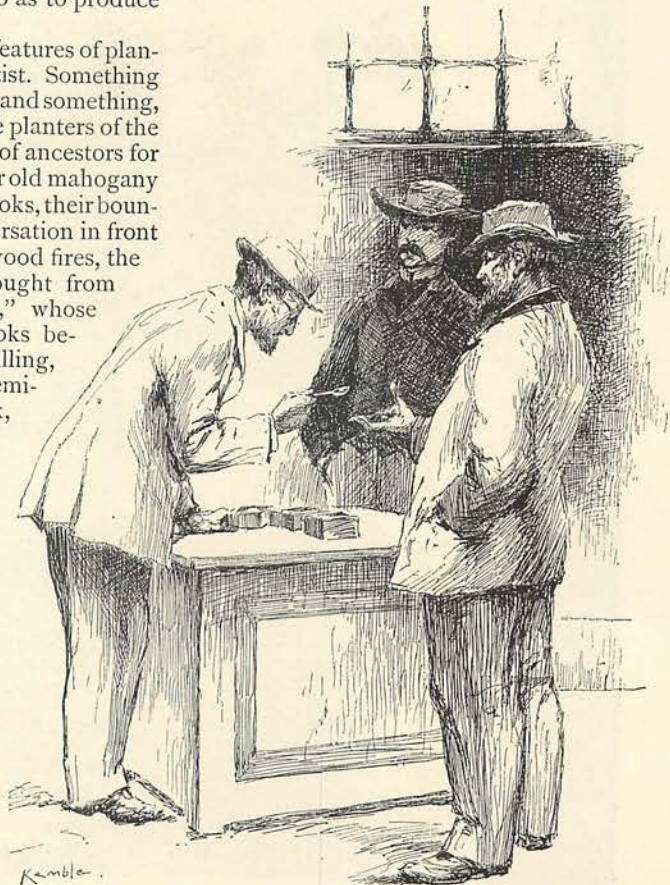
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sugar and 12,000 gallons of molasses were obtained.

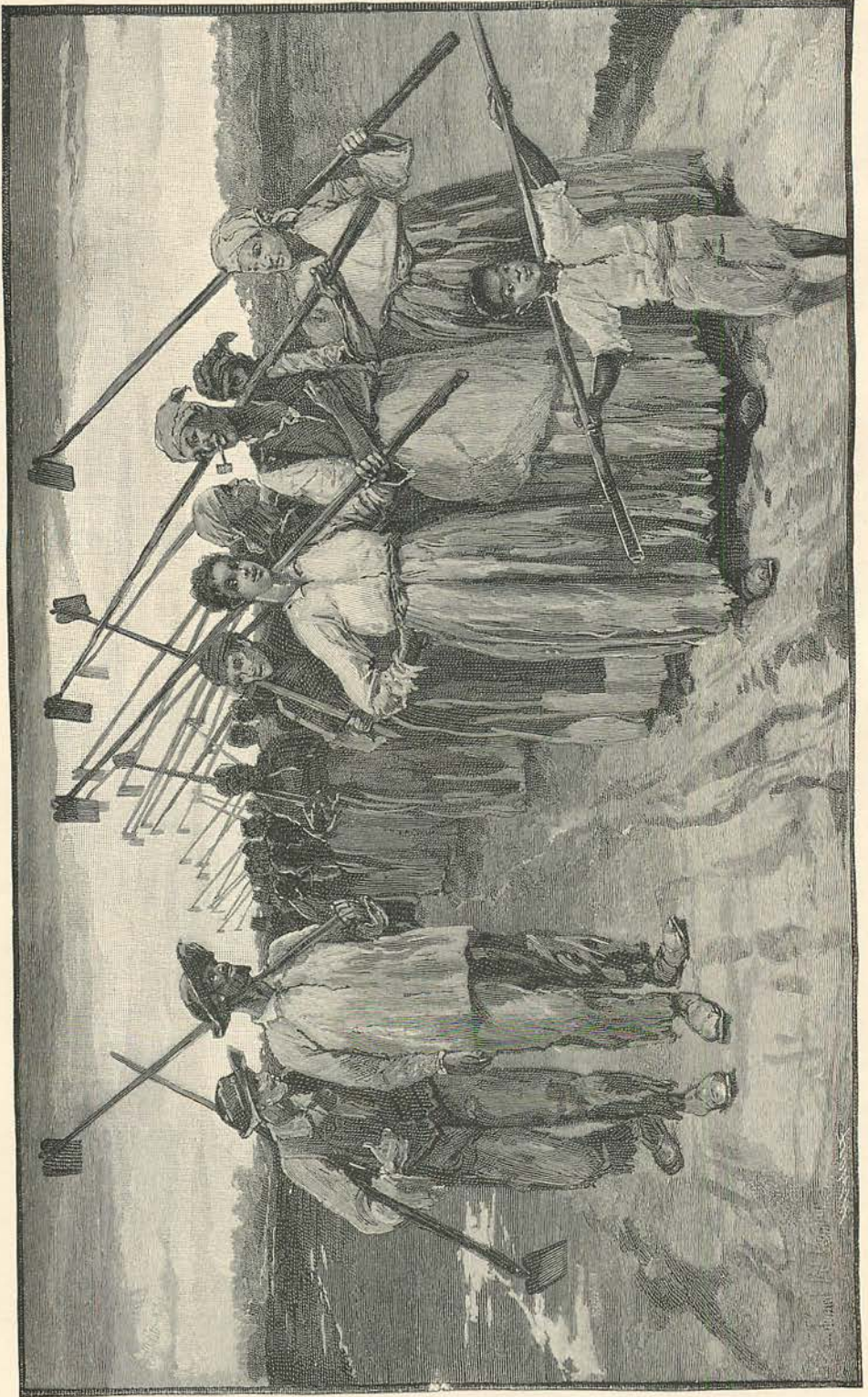
The "double-effects" apparatus was invented about thirty years ago by a free colored man named Relieux, who went to Paris and made a fortune from it. It is generally used in beet-sugar making, and also in most cane-sugar countries except Louisiana. Relieux told the Louisiana planters before he went to France that they would in the end have to use his invention or quit the sugar business.

The Louisiana Sugar Exchange, built three years ago, is a commodious structure having a large exchange room, a reading-room, telegraph office, secretary's room, etc. In the exchange are many tables where the samples of sugar and molasses are displayed. There is no speculation — no daily call, no dealing in futures, the business being purely commercial. Most of the Louisiana product is disposed of here by brokers, but many planters are members of the exchange and sell their crop directly to the merchants.

To show the wide range of values for differ-



IN THE EXCHANGE.



AT TWILIGHT.

ent grades of sugars and molasses, I copied the following figures one day in February, 1886, from the bulletin board of sales made at the Exchange. Open-kettle sugar ranged from 2 cents per pound for inferior of lowest grade to $5\frac{1}{8}$ cents; centrifugals from $4\frac{5}{8}$ for "seconds" to $6\frac{1}{4}$ cents; molasses from 20 cents for centrifugal to 27 for open kettle.

In St. Mary's parish farmers who have no sugar-houses are raising cane, crushing it, and conveying the juice through pipes to centrally located sugar-houses, just as petroleum is conveyed by the Pennsylvania pipe-lines. This system promises to have important results in opening the cane-planting industry to men of small means who cannot own large plantations and expensive apparatus.

I saw on two plantations on the "Lower Coast" a portable railway used for hauling the canes from the fields to the mill. The planters said it effected an important economy in the labor of men and animals. Rails and ties were moved from road to road as the cutting progressed.

In Ascension parish a tenant system has been in successful operation for several years. A large land-owner leases his land to small farmers, white and colored, buying the canes of them at a fixed price per ton. The tenants get their houses free of rent. In recent years barrels have entirely taken the place of hogsheads as receptacles of sugar except for the open-kettle sugar. Nevertheless the hogshead is still the unit of measurement in speaking of the crop of plantations, parishes, or the State.

The Louisiana sugar country is usually divided into the following districts, all lying below Red River: the Upper Coast, the Lower Coast, Bayou Lafourche, Terrebonne, and St. Mary's on Bayou Teche. The Upper Coast is the most important.

About one-fourth of the sugar estates are said to be owned by Northern men who have come to Louisiana since the war. As a rule they are more successful than the old planters. Many plantations are in the hands of New Orleans banks that have taken them in payment of loans. If sold by the sheriff, a plantation will not bring much more than the cost of the sugar-house and machinery. No estimates I have heard agree as to the number of estates still in the possession of the families owning them before the war. Some place it is as low as 10 per cent., some as high as 33.

Next to the negro the mule is the most important force on the sugar plantation. No mules are raised in Louisiana. All are brought from Kentucky, Tennessee, or Missouri. Horses do not long endure hard work in the hot, moist climate of Louisiana lowlands. The mule is much more hardy and longer-lived.

The plantations do not feed their laborers nor their animals. Sometimes a little corn is raised; oftener none. Hay is put up from cow-peas. Flour, bacon, corn-meal, potatoes, oats, and baled timothy hay come from the North. A planter cultivating about 700 acres will pay out \$50,000 during the year for labor, victuals, clothing, and forage before he gets a dollar back. Nearly all this money goes to Northern farmers and manufacturers.

Whisky-drinking is a common vice among the plantation negroes. Looking over the books of a plantation store in Terrebonne parish, I observed that among the items charged in each entry there was pretty sure to be a quart of whisky. Indeed whisky occurred oftener in the accounts than bacon or flour.

Indian corn-meal is no longer the staple bread-stuff on the plantations, as in the days of slavery. The negroes prefer wheat flour, and insist on having a good quality. They consume large quantities of bacon and salt pork. Fresh beef they seldom eat. They vary the monotony of hot biscuits and bacon with game and fish. Rabbits abound, wild ducks are plentiful, and rivers, bayous, and bays afford an abundant supply of fish.

Among the planters I hear two radically different opinions as to the future of the cane-sugar industry in Louisiana. A planter who is using old-fashioned apparatus, carrying heavy mortgages, and paying 12 or 15 per cent. interest and commissions, thinks the business is going to ruin. On the other hand, a planter who has a sugar-house equipped with the best machinery, and is every year getting more cane to the acre, more juice to the ton of cane, and a larger percentage of sugar from the juice, believes that the industry is only in its infancy. The scientific study of fertilizers and drainage, and further improvements in the processes of sugar-making, will result in still greater yields, he says, and if Congress will let the tariff alone for ten years Northern capital will be attracted to the industry; much wild land will be diked and drained, and Louisiana, with the aid of the beet-sugar factories of the Pacific Coast, and the sorghum of the West, will furnish sweets enough for the entire population of the United States.

Hawaiian sugar is sold to the New Orleans refiners at two cents per pound less than the price in San Francisco. The excuse for the Hawaiian treaty was to give the people of the Pacific Coast cheap sugar. It has no such effect. The exemption from duties is simply a bounty to the Hawaiian producer, to enable him to compete with our own planters. The price of sugar in San Francisco is always the Eastern price, plus the high transcontinental freight rate. Hawaiian sugar coming East is

said to pay less than half the freight rate charged Louisiana sugar going West. Since the treaty went into operation, we have practically paid the Sandwich Islands planters \$23,000,000 in the form of a remission of tariff dues,—that is, more than the value of

all the goods they have bought of us. If we had presented them with the goods outright, and collected duties on their sugar, the account between the two countries would have been more favorable to the United States.

Eugene V. Smalley.



INDIAN SUMMER.

AS frosty Age renews the early fire
 Whose eager flame in hazy warmth appears,
 And brings again, across the shadowy years,
 The vanished dreams that kindle and inspire ;
 As time repeats the hour of young desire
 In smoother laughter and more tranquil tears,
 And childish pleasures mixed with needless fears
 Stir through the pulses of the withered sire,—
 So when November, sharp with frost and sleet
 And moaning winds about the rocky height,
 Has reaped the shining forest to his hand,
 The charm of Spring returns in mellower heat,
 To veil the leafless hills with purple light
 And brood in peace above the naked land.

Dora Read Goodale.

THE LIGHT.

THERE is no shadow where my love is laid ;
 For (ever thus I fancy in my dream
 That wakes with me and wakes my sleep), some gleam
 Of sunlight, thrusting through the poplar shade,
 Falls there ; and even when the wind has played
 His requiem for the Day, one stray sunbeam,
 Pale as the palest moonlight glimmers seem,
 Keeps sentinel for her till starlights fade.

And I, remaining here and waiting long,
 And all enfolded in my sorrow's night,
 Who not on earth again her face may see,—
 For even Memory does her likeness wrong,—
 Am blind and hopeless, only for this light —
 This light, this light, through all the years to be.

H. C. Bunner.