

Why There's No Sugar—But Lots of Candy

And How It Comes About That Everybody Gets All the Sugar They Want

By Rene Bache.

CANDY, candy everywhere—but not a spoonful of sugar for the breakfast cup of coffee! Candy you can buy in unlimited quantities if you can pay the price. If you want to pay for it you can bring your market-basket, fill it with candy, take it home and come back for more as often as you like.

But no sugar. Not even a sprinkling for the children's breakfast cereal. And no sugar to make a dessert for dinner.

Obviously there is something all wrong about this. Candy is a luxury pure and simple; sugar for the household is a prime necessity. Yet sugar is denied to the American housekeeper, while anybody can get all the candy he wants if he is able to buy his sugar in this expensive form.

Why?

The answer is that it is all a matter of commercial "pull." The candy-makers have the pull; therefore they can get unlimited sugar. The housewife has it not, and so she cannot get this necessary of life, even in small quantity. Or, if she is allowed to buy sugar she can obtain only a little.

The entire sugar supply of the country is controlled by the Sugar Trust. That gigantic concern is in business to make money. The customers in whom it is interested are its big customers, the people who buy its product in enormous quantities.

Its biggest customers are the candy-makers. Therefore, their orders must be filled first; and if there is not enough sugar left over to supply the needs of the people—well, that is the people's misfortune; it does not bother the Sugar Trust.

While the war was going on the sugar shortage became so bad that the Government felt obliged to take the matter in hand, with a view to regulating the distribution of sugar. It has had it in hand ever since; but with what result? Nothing much. The Sugar Trust, apparently, is too strong for the Government.

The Government control of sugar held the price down to eleven cents—but there was little or no sugar to be had! The sugar control is to be continued a while longer, but will it do any good?

It is said that the Sugar Trust has its eye on a price of twenty-five cents a pound or even more for sugar. If the Government names a price that doesn't suit the trust what is to prevent a continued sugar "famine?"

The manufacture of sirups for sweetening soft drinks (bottled or sold by the glass) is a huge and rapidly-growing business. Those engaged in it are among the largest customers of the Sugar Trust; they get all the sugar they want.

Prohibition has greatly increased the demand for soft drinks. There is no limit on the supply of those beverages, and the corner drug store has plenty of soda sirups (made from cane sugar), even though not a pound of sugar can be obtained by any household on the same block.

The people of the United States normally consume about 4,400,000 tons of sugar annually. We Americans are the greatest consumers of sugar in the world. Of this vast quantity fully one-third goes to the makers of candy and sirups. Under ordinary conditions there would be plenty left over for household use; but at the present time the supply is short, and the family must go without, or, at best, get along with a niggardly and insufficient allowance.

Everybody must have taken note of the recent growth of the candy trade. Candy shops everywhere have multiplied, and other stores innumerable have adopted candy as a "side line." The demand for candy undoubtedly has been greatly increased by the alcoholic drought; for sugar, being a highly concentrated fuel for the body machine, is a powerful stimulant.

Miss Housewife, as an individual sugar-buyer, does not interest the Trust. Why should it bother about her or her little family? The grocer does not really care very much. If he does a large business he could sell a good deal of sugar to retail patrons, but the profit on it is small and scarce worth the trouble. Under existing conditions it is easier for him to say "no sugar" to his customers than to go out of his way to try to get it.

The Trust has a strangle hold, and henceforward its operations are not to be interfered with, beyond a requirement that it shall equitably distribute its product geographically. It can make its own price because it has no competitor. It absolutely controls the entire sugar output of the United States—the beet sugar of the West and the cane sugar of Louisiana—and also that of Cuba, where it owns half of the sugar plantations and holds mortgages on the other half. The sugar crops of Hawaii, Porto Rico and the Philippines are gathered for its use and benefit.

We produce in this country hardly one-fourth of the sugar we consume. Less than another one-fourth comes from Porto Rico, Hawaii and the Philippines. More than one-half has hitherto been imported from Cuba. But, owing to the serious shortage of sugar in Europe, most of the Cuban product is now going thither, and this is why our own supply is so woefully cut down.

Less than one-third of our own sugar is derived from the sugar cane, the balance being obtained from sugar beets. The latter are like any other beets, except that

Except the Housewife Who Can't Get It for the Breakfast Cup of Coffee or the Children's Dessert



A Train-Load of Sugar Cane on the Way to a Sugar Mill in Cuba.

they have been bred for high sugar content. There is no difference between beet sugar and the sugar of the cane when they have been refined. Both are "sucrose," almost chemically pure.

In the production of candy the manufacturers are helped out to a considerable extent by glucose, derived from cornstarch. Speaking in a rough way, hard candies (lemon drops, stick candies, etc.) are one-sixth glucose, and caramels are one-half glucose.

Starch is chemically the same thing as sugar, though in a different form. It is readily convertible into the non-crystallizable sugar called glucose—a clear, thick liquid which pours like molasses. Factories in this country produce more than 100,000 pounds of it per day from corn. It is cheap and gives to candy the requisite "body."

The United States Department of Commerce, in 1917, said that the average production cost of sugar in Cuba was less than a cent and a half a pound, ready-bagged for market. Possibly the cost to-day is as much as two cents and a half. Manifestly somebody is making a lot of money.

Europe has been accustomed to depend for its sugar supply mainly upon the beets of Germany, Belgium and France. During the war, for lack of available labor, the acreage planted with sugar beets in Germany was greatly reduced, and, owing to disturbed conditions, this branch of agriculture has not yet regained prosperity. In France and Belgium the most important beet-growing areas were occupied by the enemy. Thus it is easy to understand the reason for the present sugar shortage over there.

The shortage means high prices, which have attracted Cuban exports of sugar to Europe. It is altogether likely that from this time on Europe will continue to look to Cuba for a large part of its sugar supply. Hence the shortage in the United States will not be relieved; and, with the demand in this country steadily increasing, the housewife before long may find herself obliged to pay for this necessary as much as fifty cents a pound.

That there should be any such expectation is highly absurd, inasmuch as there is no reason in the world why we should not produce in this country all the sugar we need. The so-called "muck lands" of Florida are as well adapted for sugar cane as any lands in Cuba. Indeed, these lands produce cane bigger and richer in sugar than the Cuban. Vast areas about Lake Okechobee, in the region of the Everglades, need only to be drained in order to yield the most wonderful sugar crops in the world.

The territory that borders the Gulf of Mexico and the Caribbean Sea, with Cuba and other islands, is geographically the world's great sugar bowl. Practically all of it, in respect of climate, soil and other conditions, is ideally adapted for the production of the precious cane. But no part of it is better suited for the purpose than our southeastern peninsula, which juts out into the warm waters of the Gulf Stream.

The State of Florida alone is capable of producing all the sugar we require for our own consumption. Its muck lands (as demonstrated by existing plantations) will yield an average of sixty tons of cane to the acre. For each ton reckon 240 pounds of sugar and you have an output of more than 14,000 pounds to the acre. A thousand acres at that rate would produce 7,000 tons of sugar ready for market. One easily grasps, then, the possibilities.

If we are going to grow sugar on a sufficiently large scale in this country it must be cane sugar. The beet sugar industry has probably reached its maximum devel-

Natives of Cuba in the Cane Fields Munching Sugar Cane for Dessert.



No Limit to the Amount of Sugar for the Candy Factories.

opment, and from this time on seems likely to diminish in importance. One reason is that it demands hand labor, which is becoming very expensive. Cane sugar is a machine-made crop; or, at all events, can be made such. The cane-harvester cuts the cane in the fields and loads it aboard wagons or motor trucks, from which it is mechanically transferred to waiting cars. The car, on reaching the factory, automatically dumps its contents upon endless belts, which carry the cane to the crushers. The latter break up and shred the stalks so that the juice is readily extracted by pressure between rollers.

Beet sugar (unlike cane sugar) cannot be used raw. It has a most unpleasant taste and odor, owing to mineral salts and organic substances that it contains. To extract it, coal or oil must be used as fuel. Where cane is concerned, the fuel used costs nothing; it is the residue of crushed cane, a waste product. To supply our sugar needs would require 214 average beet sugar factories, as against seventy in the cane fields. Nearly half a million beet

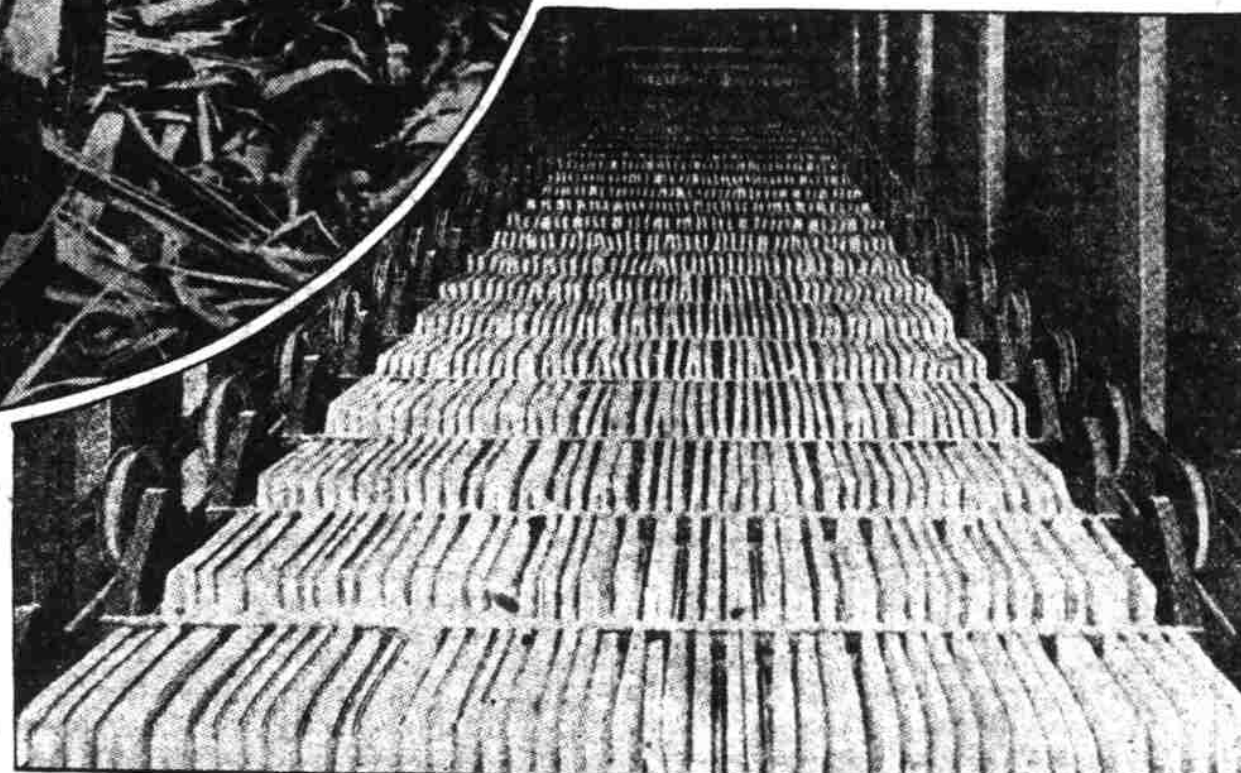
farmers would be occupied in doing work which 30,000 cane farmers could perform.

If we produced our own sugar we would have as a by-product the molasses, for which there is a ready market in this country. In the West Indies most of it is thrown away, for lack of demand, though some of it is distilled for rum. In Hawaii it is burned as fuel; in Java it is used as a fertilizer, and in San Domingo it is run off into creeks and rivers.

How important this matter is may be judged from the fact that the sugar we imported in 1919 would (if we had produced it ourselves) have yielded 120,000,000 gallons of molasses. Leaving aside the utilization of some of it as food, it would have been convertible into 48,000,000 gallons of alcohol, with a value 60 per cent that of gasoline, and, in addition, would have contributed 21,000 tons of potash to our inadequate supply of that mineral compound so precious to American farmers.

The sugar cane is not native to the new world. It comes from India and China originally—a giant jointed grass

A Load of Sugar Coming from the Sugar Estate—This Costs Between Two and Three Cents a Pound to Produce.



Tons of Tablet Sugar.

which was used in those countries for sugar production many centuries before Europe knew any other sweetening than honey.

The cost of sugar to the public has steadily increased since the war began. It is predicted that the price will be raised again and again in the near future—sugar at twenty-five cents, even fifty cents a pound is predicted by some.

The enormous magnitude of the sugar business in the United States is hard to grasp. But one little side-show to the business casts a light upon the hugeness of the industry. One sugar company in a report in 1918 said:

"One of the most important items in the distribution of sugar has been the cost of the barrel. The company in shipping their products to the four quarters of the globe require every year millions of barrels. This one item has necessitated the acquisition through another constituent company of standing timber on lands covering an area of 625 square miles, or more than one-half the size of Rhode Island. The estimated timber which may be cut from its holdings amounts to half a billion feet."

"To insure a constant source of supply on a low basis of cost, this constituent company has five large barrel factories and seven stave and heading mills, the latter with six and one-half miles of stave sheds. To bring the logs to the mills it has had to construct and operate 130 miles of railroad."

"Built in the first instance for this purpose, some of these roads have developed into interstate commerce carriers with standard freight and passenger equipment. One road already forty-four miles long, and to which extensions are constantly being made, has become the main artery between thriving industrial centers created by it in a region formerly a swamp. The barrel factories have an annual

output of over 7,000,000 barrels, requiring in their manufacture 80,000,000 board feet of timber which is produced in the stave and heading mills of the company. Prudence has required reforestation on a large scale, and since 1910 about one-half million of white pine and spruce trees have been planted by the company in the open forests of the Adirondacks."

This is interesting—a whole forest required just for the sugar barrels. But what can be done and who will do it to stop the mounting price of sugar?

The United States Department of Agriculture says in a bulletin:

"The most interesting use of sugar is as a food for the animal body. Within certain limits sugar may be considered as the equivalent of starch that has been digested and made ready for absorption. Sugar constitutes 5.4 per cent of the average diet and furnishes 17.5 per cent of the total energy in it. It is clear that starch, sugar, or any food that will serve the same purpose is of great importance."

"When sugar is eaten it is changed in the digestive tract before it is taken up in the blood and carried where it is needed. If a solution of cane sugar be injected directly into the blood it is passed out by the kidneys unchanged, showing that it is not fitted for assimilation until it has been changed, as it is in normal digestion. The change needed is slight compared with that required for the digestion of starch, sugar being 'inverted' or changed into the simpler sugars, and this change is brought about in the digestive tract by the agency of enzymes or ferments regarding the nature of which little is known. When thus changed into the simpler sugars its function in the body is similar to that of starch after it has reached the analogous stage in digestion."

"At the Minnesota Experiment Station the thoroughness of digestion of sugar was studied with healthy men, five ounces per day being consumed as a part of a simple mixed diet. The sugar showed a high digestibility, 98.9 per cent of its total energy being available to the body, on the average. In general it increased the available energy of the whole ration 25 per cent, and did not affect the digestibility of the foods with which it was combined. The protein of the ration was more economically used than commonly, the nitrogen retention being increased 25 per cent. It was pointed out in discussing these experiments that 'the value of sugar in a ration depends upon its judicious use and combination with other foods.'"

"The main function of sugar as found in the blood, whether resulting from the digestion of sugar or of starch, is believed to be the production of energy for internal and external muscular work, and, as a necessary accompaniment, body heat. This has been amply demonstrated by experiment. By ingenious devices the blood going to and from a muscle of a living animal may be analyzed, and it is thus shown that more blood traverses an active or working muscle and more sugar disappears from it than is the case with a muscle at rest."

"To decide the question of the value of sugar as a source of energy for the working muscle, much careful laboratory work has been carried on. It has been found that an increase in the sugar content of the diet, when not too great and when the sugar is not too concentrated, lessens or delays fatigue and increases working power."