

“The Problem with Sugar Cane”

From *Sugar Changed the World*, by Marc Aronson and Marina Budhos (2010)

There are two problems with cane if you want to make vast amounts of sugar: one of time and the other of fire. Growers claimed that the instant a knife sliced the stalks, the sweet mass inside started to harden and turn woody. Apparently, if they did not get the cane into the boiling vat within forty-eight hours—preferably twenty-four hours—their crop would be ruined. Whether or not that speed was absolutely necessary, owners insisted on it. They may also have been thinking of pure economics: Once you cut cane, it begins to dry out. Piles of cane are heavy, bulky, and hard to move, while sugar in tiny crystals can be packed into barrels and shipped by water. Cane loses money as long as it sits, and is on its way to making money once it has been made into sugar. For the growers, time truly was money.

The only way to make a lot of sugar is to engineer a system in which an army of workers swarms through the fields, cuts the cane, and hauls the pile to be crushed into a syrup that flows into the boiling room. There, laboring around the clock, workers cook and clean the bubbling liquid so that the sweetest syrup turns into the sweetest sugar. This is not farming the way men and women had done it for thousands of years in the Age of Honey. It is much more like a factory, where masses of people must do every step right, on time, together, or the whole system collapses.

The Muslims worked out a new form of farming to handle sugar, which came to be called the sugar plantation. A plantation was not a new technology but, rather, a new way of organizing planting, growing, cutting, and refining a crop. On a regular farm there may be cows, pigs, and chickens; fields of grain; orchards filled with fruit—many different kinds of foods to eat or sell. By contrast, the plantation had only one purpose: to create a single product that could be grown, ground, boiled, dried, and sold to distant markets. Since one cannot live on sugar, the crop grown on plantations could not even feed the people who harvested it. Never before in human history had farms been run this way, as machines designed to satisfy just one craving of buyers who could be thousands of miles away.

On a plantation there were large groups of workers—between fifty and several hundred. The mill was right next to the crop, so that growing and grinding took place in the same spot. And all the work was governed by extremely tight, rigid discipline. The Muslims began to put together the rules for this new kind of farming. Both they and the Christians experimented with using their slaves to run the plantations.

At first many of the slaves working sugar plantations in the Mediterranean were Russians, or anyone captured in war. But even all this careful organization did not solve the second problem with sugar.

In order to keep those vats boiling, a great deal of wood to burn was needed. (Later on, sugar planters figured out that they could use the crushed cane stalks as fuel.) Not many places in the world offer rich lands that can grow cane, are near water so that the sugar can be easily shipped to distant shores, and are filled with trees ready to be cut down. The sugar plantation solved the management problem of cutting and refining a large crop, but it did not supply growers with the forests they would need to cut down in order to boil the sugar syrup.

In the 1400s, Spain and Portugal were competing to explore down the coast of Africa and find a sea route to Asia. That way, they could have the prized Asian spices they wanted without having to pay high prices to Venetian and Muslim middlemen. Spanish and Portuguese sailors searching for that sea route conquered the Canary Islands and the Azores. Soon they began building Muslim-style sugar plantations on the islands, some of them staffed by slaves purchased from nearby Africa. One sailor came to know these islands particularly well because he traded in “white gold”—sugar. And then, as he set off on his second voyage across the sea to what he thought was Asia, he carried sugar cane plants from Gomera, one of the Canary Islands, with him on his ship.

His name was Christopher Columbus.

“The Problem with Sugar Cane”

From *Sugar Changed the World*, by Marc Aronson and Marina Budhos (2010)

1. Why is sugar production very “time sensitive”?
2. In what way is sugar cultivation more like factory work than typical farming? How is a sugar plantation an early factory?
3. What are the labor requirements of a sugar plantation?
4. What geographic conditions are necessary not only to grow sugar, but also to make it economically profitable?
5. What motivated the Spanish and Portuguese to explore the coast of Africa? How is this related to their conquest of the Canary Islands and Azores?
6. How are the Canary Islands and their purpose a KEY piece in the story of the discovery and settlement of the New World?