CHAPTER 3

THE SUGAR PLANTATION

Although other crops were grown in the Caribbean, sugar reigned supreme during colonial days and was the main reason for the competition among European powers for possession of the Caribbean islands. The nature of the operation required a large estate and a well-equipped factory to make cultivation profitable. In the eighteenth century, it was estimated that the minimum to accomplish this was 300 acres of land and 30 slaves to work it. Larger estates were even more profitable, and some were as large as 3,000 acres.

The original home of sugarcane was the South Pacific. Coming to Europe by way of India, it was probably introduced into Hispaniola by Columbus, and from there it went to the other islands. Barbados, in 1640, was the first English island to start systematic cultivation.

The desired ingredients for a sugar plantation were fertile soil, accessible location, proximity to shipping, and a stream of water on the premises. The principal buildings in the work area were the mill, boiling house, curing house, still, and trash house. In addition to the actual mill operation, there would have to be

Fig. 76. Old print showing slaves "holeing" sugarcane

workers' houses, and shops for the various crafts workers, such as blacksmiths, carpenters, coopers, and wheelwrights.

Demanding the least in terms of location was the animal mill, whose building was usually round or octagonal with a conical roof. At the center, three vertical rollers were rotated by a system of cogs, activated by one or two horizontal shafts to which oxen, horses, or mules were yoked. To power the mill, the animals were driven around in a continuous trot as the cane was fed into the rollers.

Fig. 77. Drawing of canes being carted to the mill, ca. 1836

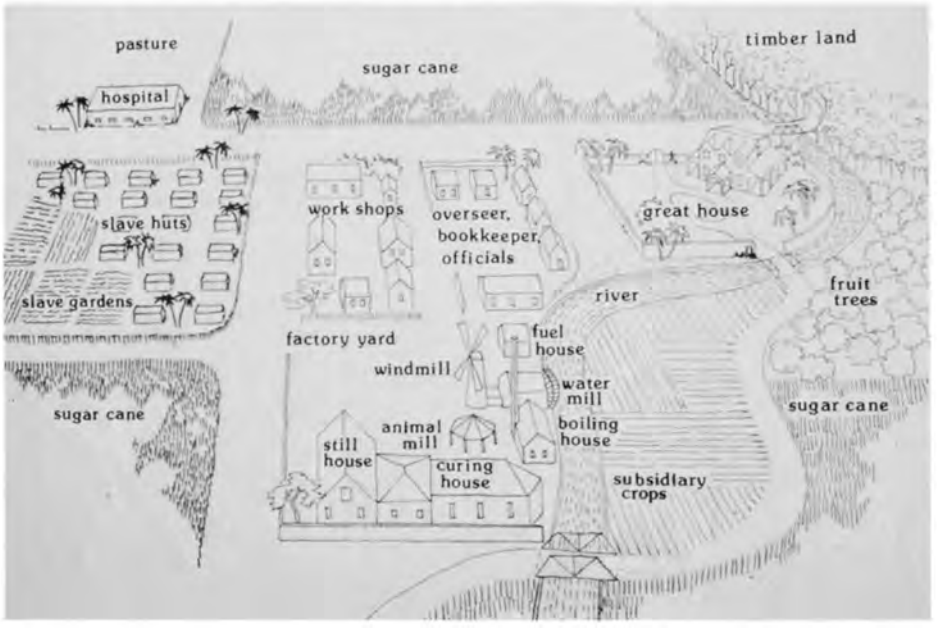

Fig. 78. Typical arrangement of the Caribbean plantation

For obvious reasons, if windmills were used to power a mill they had to be located on open or hilltop sites, which frequently restricted their use. Nevertheless, shells of this type of mill exist all over the Caribbean, attesting to its popularity.

Where available, streams or rivers provided the most efficient power, even when the water source was remote from the plantation. An elevated aqueduct was required for an overshot wheel, where the weight of the water turns the wheel; an undershot wheel depends upon the velocity of the water to turn it. Because the flow of a river or stream depends upon rainfall, dammed reservoirs were frequently created to store water in the event of a shortage. There are many aqueduct ruins in the Caribbean, some designed to bring water for a distance of

Fig. 79. Drawing of a Caribbean windmill, 1823

Fig. 80. Drawing showing operation of a windmill

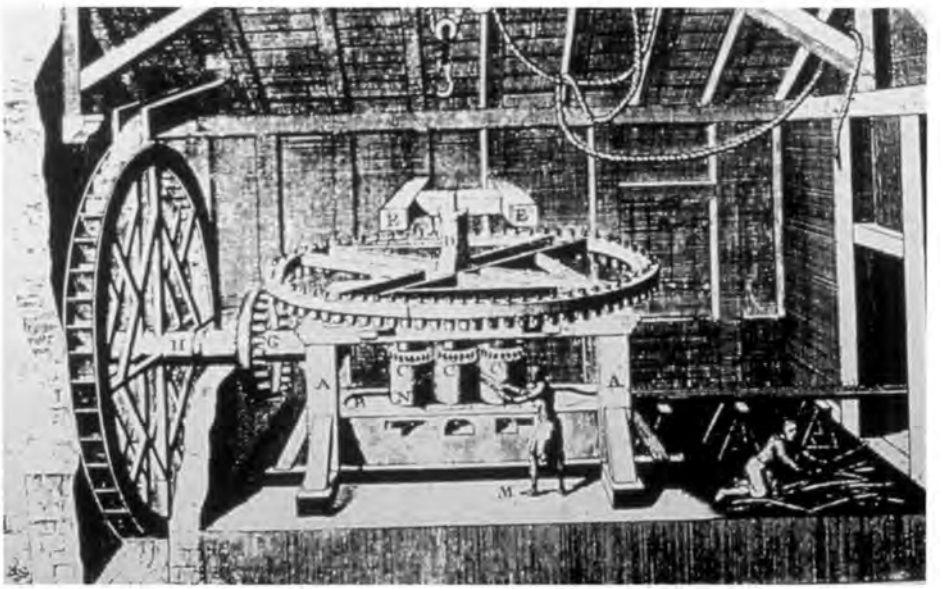

Fig. 81. French illustration of an overshot water mill

several miles from the source. It was not unusual for two or all three of these power sources to be in use at a single plantation.

Steam power was introduced in the late eighteenth century but was not widely used in sugar mills until the second half of the nineteenth. This power change, which revolutionized the entire sugar industry, was accompanied by a change in the design of mill equipment, so that the rollers were placed horizontally instead of vertically.

Fig. 82. Hope Aqueduct, Kingston, Jamaica

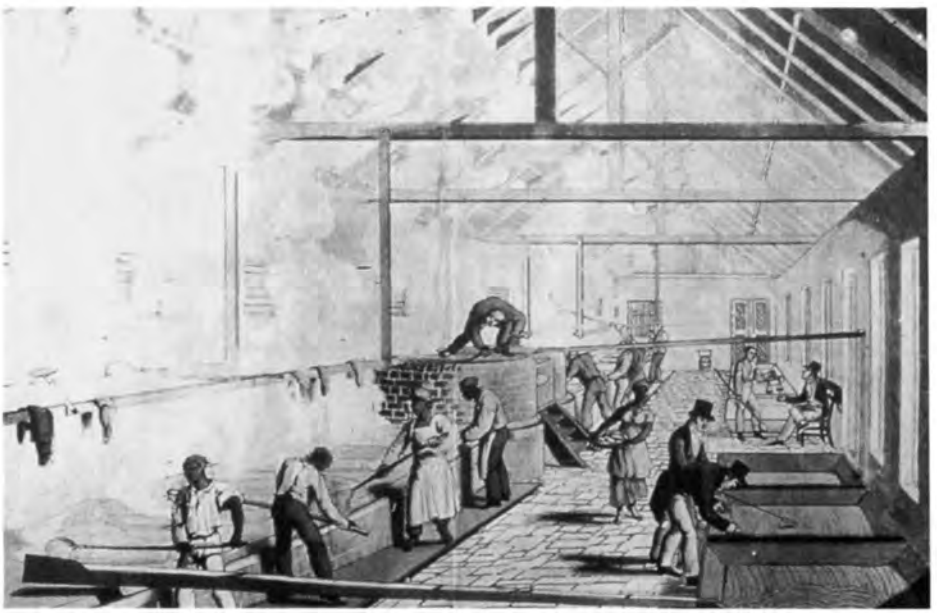

Fig. 83. Drawing of an Antiguan boiling house, 1823

In the processing of sugar, the juice was squeezed from the cane and brought to the first cistern in the boiling house, where it was tempered with lime to assist in removing dirt. It was then boiled in a series of vats heated by furnaces fueled by bagasse, the crushed canes that had been dried in the trash house. When the juice was reduced to sugar, it was put into casks; they were moved to a curing house, then taken to the wharf and shipped. By the 1850s, decentralization was under way, for the cane increasingly was taken to remote factories to be processed.

Fig. 84. Whim Plantation great house, late 1700s, St. Croix, U.S. Virgin Islands

Fig. 85. Whim Plantation animal mill, St. Croix, U.S.V.I.

Fig. 86. Whim Plantation windmill, St. Croix, U.S.V.I.

Fig. 87. Whim Plantation windmill rollers

The "great house" of the planter was remote from the mill and slave quarters, usually in a location with the best view. By the early twentieth century, the planter-proprietor was frequently an absentee owner, and the overseer's house began to replace the great house.

The restoration at Whim Plantation, near Frederiksted in St. Croix, U.S. Virgin Islands, shows the typical organization of a Caribbean sugar mill. Whim is valuable as the only one preserved of some 300 estates on St. Croix operated by the Danes in the early 1700s (see plate 6). The site, 12 of the original 150 acres, is under the auspices of the St. Croix Landmarks Society. There is no stream to operate a water mill, but all other mill types are present. The floor of

Fig. 88. Whim Plantation steam mill, St. Croix, U.S.V.I.

Fig. 89. Whim Plantation boiling house chimney and windmill, St. Croix, U.S.V.I.

Fig. 90. Remains of Whim Plantation distillery, St. Croix, U.S.V.I.

the animal mill is slightly elevated, accessible by ramp. Two animals rotated the horizontal shaft that turned the central cylinder, which, with cogs, turned the two exterior cylinders. This arrangement allowed cane to be fed in from both sides. The windmill has been visually restored with excellent stone masonry, the openings accented by classical quoins. Its floor is also elevated, although it is not a two-level operation. The remains of two steam mills, put into use in 1865 after emancipation, show that the rollers had been changed from vertical position to horizontal, as was typical.

Only the foundation and great smokestack remain from the boiling house at Whim, and a large copper still recalls the days of rum making. Whim Plantation ceased its sugar mill operation in the 1920s. Its great house will be discussed later.