


Lecture 34
**Horticulture, Politics, and World Affairs:
Sugarcane, Plantation Agriculture & Slavery**



Horticulture, the source of valuable commodities, has influenced world affairs since antiquity
Ancient wars fought over agricultural resources and territory
Age of Exploration brought about by search for spices
Major tropical products such as sugar, tea, and bananas have had major impact on slavery and colonialism

Honey




Hunter of bees, Arana, Spain 7000 BCE




Bee in Ancient Egypt

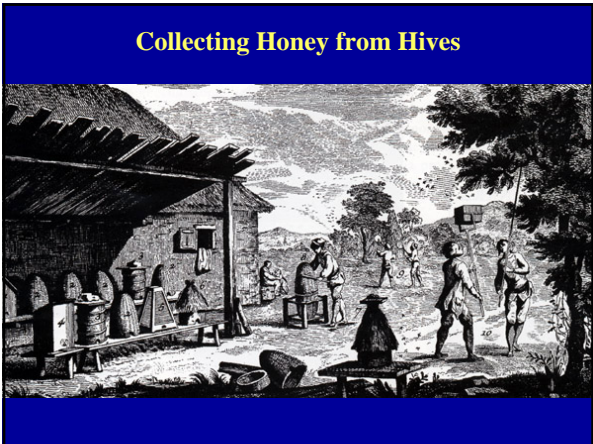
Honey

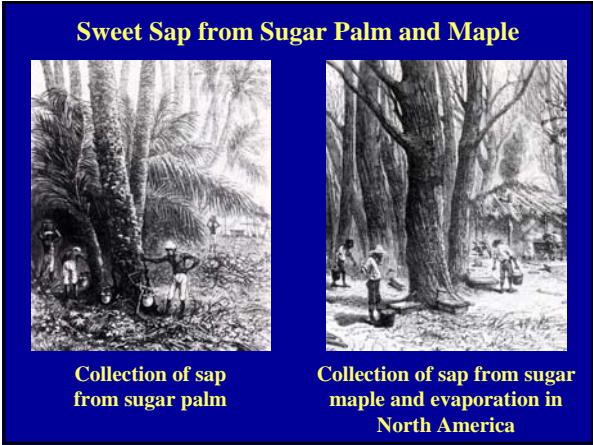


Garden with wattle fence, fountain



Apiary surrounded by wattle fence





Sugarcane (*Saccharum officinarum*, Poaceae)

Most important source of sucrose
Cheapest energy food
Crop of the humid tropical lowlands but grows well in savanna climate



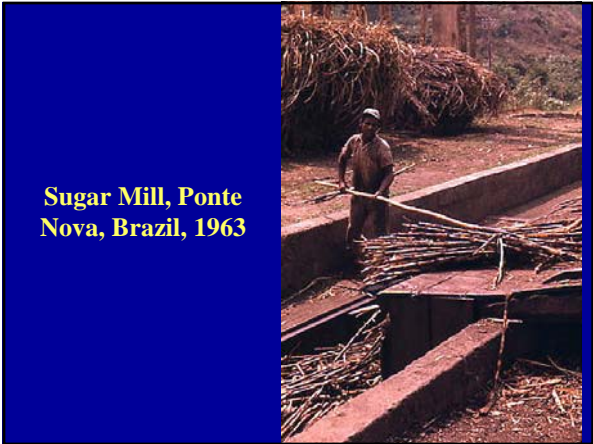




History of Horticulture: Lecture 34







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Sugar Mill, Ponte Nova, Brazil, 1963



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Sugarcane, Nerja, Spain, 1972

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Loading Sugarcane, Fodder on Donkey, Nerja, Spain, 1972

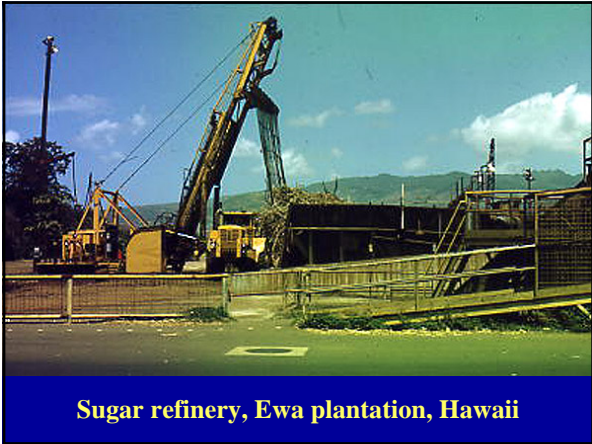


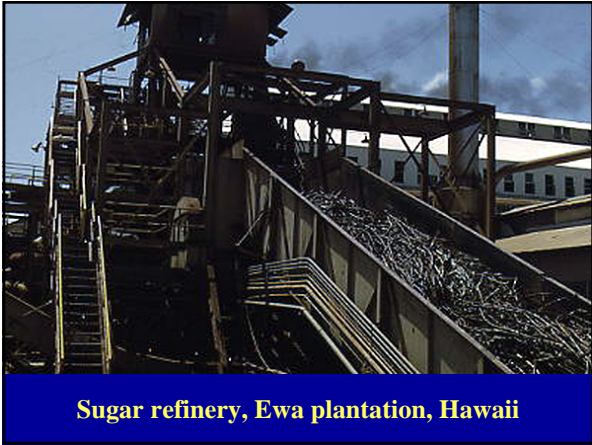
Sugarcane harvest, Puerto Rico, 1972



Loading sugarcane, Maui, Hawaii

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Saccharum species

S. officinarum (2n=80):
Thick-stemmed (“noble”) canes from New Guinea

S. sinense (2n=118):
Thin-stemmed hardy canes from China

S. barberi (2n=variable)
Thin-stemmed hardy canes from India

S. spontaneum
Wild canes of southeast Asia; important in breeding

S. robustum
Deeply penetrating roots, disease and drought resistant

Sugar Cane

World Production	1000 MT	Chief countries
World	1,254,857	
Africa	87,504	South Africa (23,896), Egypt (15,620), Mauritius (5,500)
North America	164,056	Mexico (49,500), Cuba (35,000), US (31,571)
South America	421,303	Brazil (339,136), Colombia (33,400), Argentina (15,000)
Asia	547,001	India (286,000), China (79,700), Thailand (49,070)
Europe	84	Spain (80), Portugal (4)
Oceania	34,909	Australia (31,039), Fiji (3,500), Papua New Guinea (367)

Sugarcane History

Cultivated in India in 400 BCE

Sugarcane cultivation technology carried to China and Arabia

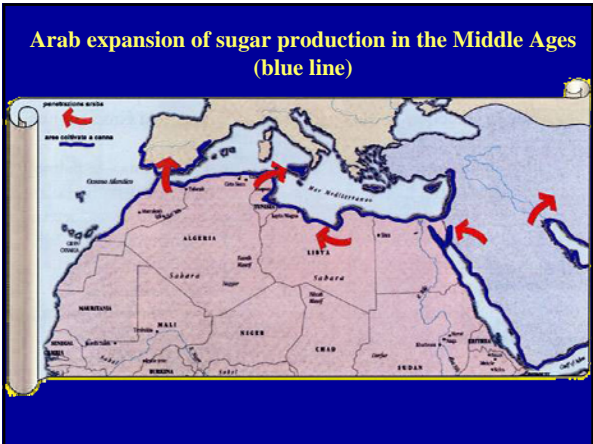
Crusades brought sugarcane cultivation to Europe

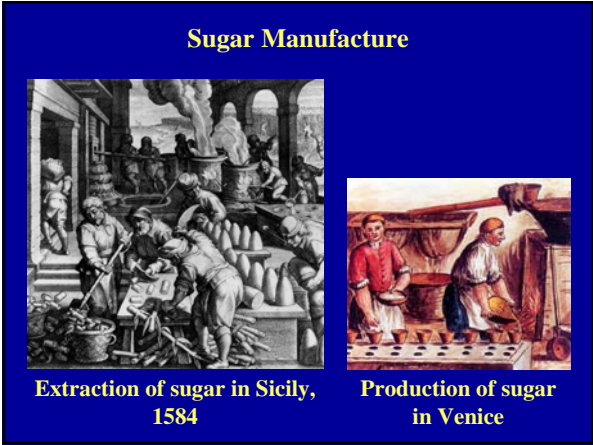
Introduced to Madeira and Azores in 1420

Columbus took sugar to New World in 1493

1791, Captain Bligh transported *S. officinarum* (noble canes) from Tahiti to Jamaica

Plantation agriculture first developed in the Azores and spread to the New World





Characteristics of Plantation Agriculture

- Commercial production
- Large scale (relatively) usually considered larger than 80 hectares (200 acres)
- Central management
- Capital intensive—often including transportation and shipping
- Labor intensive—but changing with agricultural revolution, especially machine harvest and herbicides
- Combination of agricultural-industrial enterprise
- Tendency toward monoculture
- Continuous year-round production
- Plantation economy tied to industrial economy of the world



Sugar production in Havana, Cuba 19th century

Origins of Plantation System

Started in Brazil with settlement of northeast (Bahia and Recife) in the 16th century

Gold was original aim, but none in area, so sugar production was adopted

Sugarcane technology from Madeira, Azores, and Capo Verde

Large Land Grants (*Capitanias*) were established along the coast, 150 miles wide and as far West as could be controlled

Grantee had power over inhabitants

Tremendous demand for sugar in Europe (rum in demand in England but excluded from Europe which had brandy from wine)

Original plan was for exploitation of Indian labor, but diseases decimated local populations and Indians made poor slaves

The solution was the use of Black African slaves purchased from slave traders along the African coast where Portuguese had colonies

Plantation system based on African slavery soon spread to the entire Caribbean

“Sugar Islands” became the source of tremendous wealth in the 17th and 18th centuries

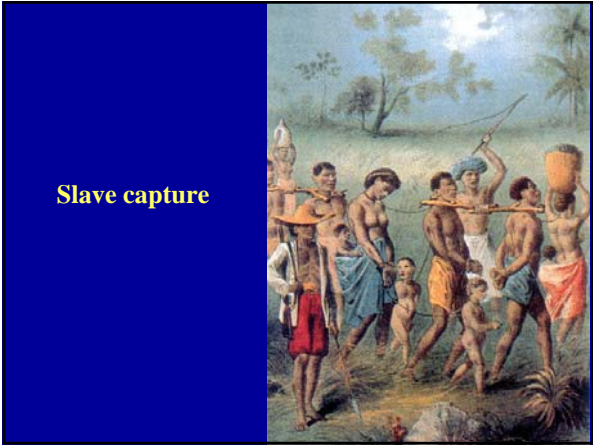
Slavery and the Slave Trade

Slavery has been present in one form or another for all of recorded history

Commonly mentioned in the bible

Slaves were considered property, a shameful episode in human history, now universally condemned

Slavery still exists in various forms

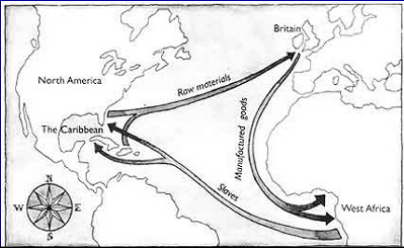


Slave trade source of great wealth for Britain and New England

Slave ships would pick up slaves in Africa and sell them in the Americas

On the return voyage they would return with sugar or rum

All manufactured goods came from England and were transported in British ships



Sugar industry reached its greatest heights in Jamaica

In 1655, when Jamaica was taken from the Spanish by the British, there were 3000 black slaves

In 1800 there were 300,000 black slaves

Most of increase due to imports as rate of natural increase was low, not even sufficient to maintain the population until emancipation

System collapsed in the 1800s

Slave uprisings













End of slave trade and emancipation (1830 in England)

End to mercantile protection (sugar beet became competition)

Inefficiencies of the system due to fact that system run by foreign managers

Low prices due to competition from beet sugar

Processing Beet Sugar
Early 20th Century

Slavery and the United States

The slave system part of American history, especially in the South

Attempts to prohibit slavery in the constitution failed but a date certain provided for ending the slave trade

The South got the 3/5 rule: slaves were counted as three-fifths of a person, to determine congressional representation, a shameful decision

By 1790 slavery was declining institution in America because sugar not well suited to the US, but revived with the invention of the cotton gin by Eli Whitney (1794) which made cotton profitable as a plantation crop

Cotton became the ideal plantation crop in the deep South following the model of sugarcane

Slavery did not take hold in the North because it was unsuitable for small farms; objected to by white working class because it brought down the price of labor

The political situation in the US was largely affected by the slave situation

Senate was split between Northern and Southern interests

South wanted low tariffs because they were buyers of goods, and demanded protection for slavery

The North wanted tariffs to protect their industry, and wanted to exclude slavery from new states; abolitionists were against slavery on moral grounds

The House soon passed to Northern control because of population increases in the North but the equal representation of states in the Senate made the expansion of slave states critical to the South

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In the early 1800s the Missouri Compromise (a deal struck by Henry Clay and Daniel Webster) accepted slavery in the South and excluded it in the North (based on the Mason-Dixon line)

However, Manifest Destiny policy sought to expand US borders to the Pacific bringing in scores of new States

The issue of whether new states would be “slave” or “free” was politically vital to the South because introduction of free states would eliminate political control of the senate and doom slavery

The election of Abraham Lincoln, who vowed not to disturb slavery in the South but was adamant against its expansion, brought secession and the Civil War

The question of slavery was decided by the sword
