

### Lecture 35 Spices and History



**Spices:** aromatic and pungent products of tropical plants, properties based on essential oils which are oily benzene or terpene derivatives, vaporizing and flammable.

**Herbs:** small temperate plants used for aromatic constituents

**Incenses:** plant substances that release fragrances when burned

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### Spices in Antiquity

1. Magical rites and spells
2. Purification ceremonies and embalming
3. Fragrances and perfumes
4. Flavoring and condiments
5. Food Preservation
6. Curatives, aphrodisiacs, vermafuges
7. Poisons

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### Measuring Heaps of Incense



In the 12<sup>th</sup> century BCE King Rameses III had a special building constructed near Thebes to store incense for the worship of Amon.

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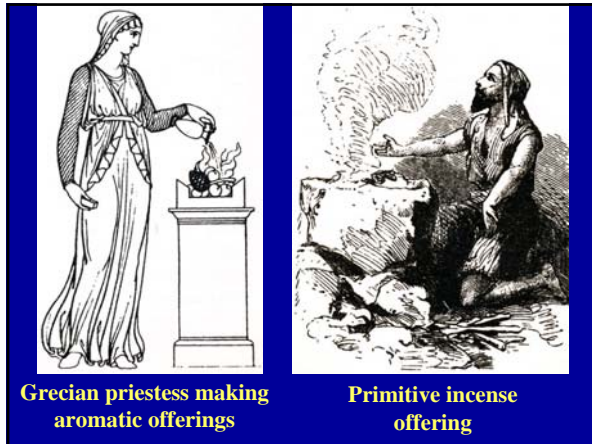
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Tropical Horticulture: Lecture 35



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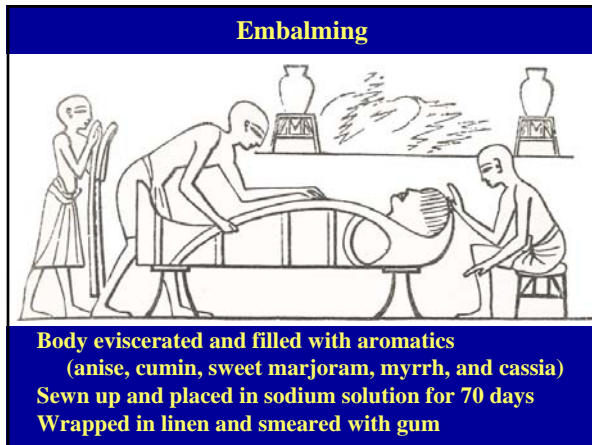
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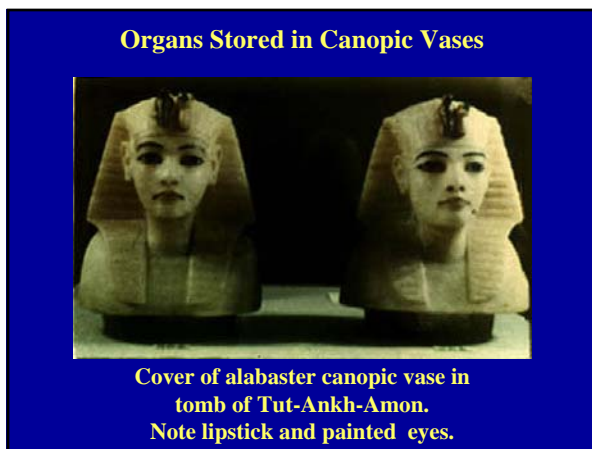
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Spices were used in early Egypt as aromatic body ointments and pomades

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### Essential Oils and Perfume



A visual representation of the fragrance from essential oils being extracted from an herb.

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### Gathering lilies for their perfume



Source: Singer et al., 1954, Fig. 189.

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# Tropical Horticulture: Lecture 35

**Perfume and Cosmetics**



**Expressing oil of lily**

Source: Singer et al., 1954.

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**Compounding Ointments and Perfumes (Thebes 1500 BCE)**



Assistants crush dried herbs with pestle and mortar (1,2,3,4).

Crushed herbs are added to a bowl of molten fat, stirred (5) and shaped into balls upon cooling (6).

Special jars probably contained spiced wine, a useful solvent because of alcohol. Content is siphoned and filtered into a bowl (7).

At extreme left an assistant shapes a piece of wood beneath a bowl heaped with unguents (8).

Source: Singer et al., 1954.

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**Egyptian Bearers with Fruits, Flowers, and Herbs**



Onions (in the triangular rack) were an important health food, fed to the workers during the construction of the Great Pyramid of Cheops, about 2590–2568 BCE.

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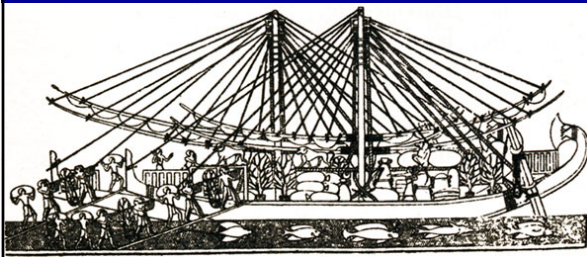
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**Plant Expeditions to Obtain Spices**



**Ships of this type were dispatched from Egypt about 1485 BCE by Queen Hatshepsut to the land of Punt to bring back frankincense, cinnamon, and myrrh trees.**

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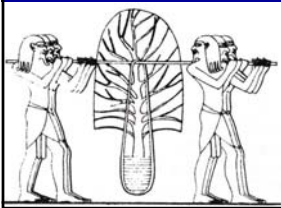
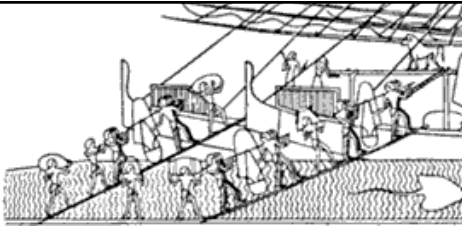
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**Transporting myrrh,  
Queen Hatshepsut's  
expedition**

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**Spices Associated with Romance**

*Thy plants are an orchard of pomegranates, with pleasant fruits; camphire, with spikenard, spikenard and saffron; calamus and cinnamon, with all trees of frankincense; myrrh and aloes, with all the chief spices (Song of Solomon 4:13,14)*

*Awake, O north wind; and come thou south; blow upon my garden, that the spices thereof may flow out (Song of Solomon 4:16)*

*My beloved is gone down into his garden, to the beds of spices, to feed in the gardens; and to gather lilies (Song of Solomon 6:2)*

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# Tropical Horticulture: Lecture 35

**Ancient Spices**

Sesame	Cardamom
Dill	Garlic and Onion
Thyme	Saffron
Mint	Cassia
Myrrh	Frankincense
Galbanum	Sweet Calamus (sweet flag)

**Stacte**  
(oil of cinnamon or cassia or aromatic gum resins)

**Onychis**  
(mollusk shell which gives off odor when burned)

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**Ancient Spice Trade**

Evidence of silk 1000 BCE evidence of early trade between Egypt and China

**Biblical story of Joseph and his Brothers**  
*And looking up they saw a caravan of Ishmaelites coming from Gilead, with their camels bearing gum, balm, and myrrh, on their way to carry it down to Egypt.*  
(Illustrates overland trade from Syria to Egypt)

Biblical spices in Hebrew Bibles included cinnamon and cassia, which do not grow in the Mideast, yet biblical references allude to them.

Nile to Red Sea canal built 285–245 BCE

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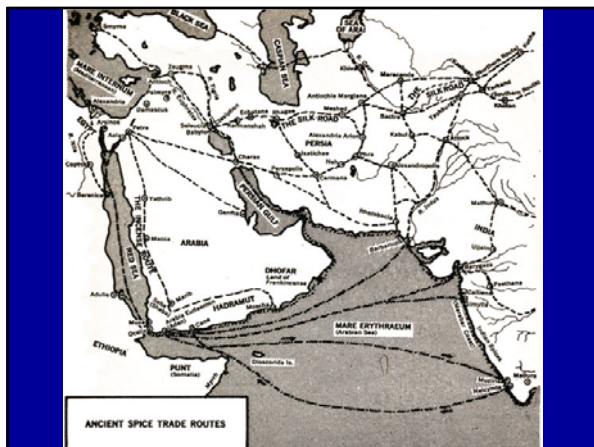
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### Monsoon Winds Promoted the Spice Trade

Seasonal monsoon winds, which affected historic sailing routes in the Indian Ocean, were discovered by Hippalus about 40 BCE.

The prevailing winds blow from the southwest from April to October and from the northeast from October to April.



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### Arabia and Spices

South Arabia became the great spice emporium of the ancient world

Information based on Herodotus, Theophrastus, Strabo, and Pliny

Herodotus reports Arabia as “the only” true source

*Their manner of collecting the cassia is the following: They cover all their body and their face with the hides of oxen and other skins, leaving only holes for the eyes, and thus protected go in search of the cassia, which grows in a lake of no great depth.*

*All round the shores and in the lake itself there dwell a number of winged animals much resembling bats, which screech horribly, and are very valiant.*

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*These creatures they must keep from their eyes all the while that they gather the cassia.*

*Still more wonderful is the mode in which they collect the cinnamon.*

*Where the wood grows, and what country produces it, they cannot tell—only some, following probability, relate that it comes from the country in which Bacchus was brought up.*

*Great birds, they say, bring the sticks which we Greeks, taking the word from the Phoenicians, call cinnamon, and carry them up into the air to make their nests.*

*These are fastened with a sort of mud to a sheer face of rock, where no foot of man is able to climb.*

*So the Arabians, to get the cinnamon, use the following artifice.*

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*They cut all the oxen and asses and beasts of burden that die in their land into large pieces, which they carry with them into those regions, and place near the nests: then they withdraw to a distance, and the old birds, swooping down, seize the pieces of meat and fly with them up to their nests; which not being able to support the weight, break off and fall to the ground.*

*Whereupon the Arabians return and collect the cinnamon which is afterwards carried from Arabia into other countries.*

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**Theophrastus mentions trade between India and Arabia**  
**Pliny destroys the myth of Arabia but credits Ethiopia!**  
**All these tales**  
*“have been evidently invented for the propose of enhancing the price of these commodities.”*

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**Greece & Rome**

**Great users of spices: black and white pepper, anise, caraway, cumin, mint, mustard, ginger, sweet basil, laurel, sweet majoram, sylphium (lazer)**

**Medicinal properties ascribed**

**Fantastic medicinal uses persisted through Dioscorides and the herbalists.**

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# Tropical Horticulture: Lecture 35

## The export of Silphium in the 6<sup>th</sup> century BCE

Silphium was the most famous medicinal plant (now extinct) of the ancient Mediterranean world.

This illustration, from a Cyrenaic drinking cup (6<sup>th</sup> century BCE) shows the weighing and loading of silphium at Cyrene, North Africa, where it was chiefly grown.



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## Alexander the Great 326 BCE



The campaign of Alexander the Great in northern India in 326 BCE led to increased botanical knowledge concerning spices and herbs.

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## Roman

Trade between Middle East and India increased under Roman rule:  
route from India to Red Sea to Egypt, down the Nile to Alexandria and then to Greece and Italy via the Mediterranean Sea.

Spices important part of Roman revenue

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# Tropical Horticulture: Lecture 35



In Revelations 18:11–13, written about 90 CE, the prophet John symbolically predicted the coming downfall of sinful Rome.

To avoid persecution by the emperor Domitian, he substituted the name of ancient Babylon for that of Rome, as he obscurely described how the merchants of the earth would mourn over their losses of merchandise, including cinnamon and frankincense, upon the destruction of the city.

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## 3<sup>rd</sup> to 5<sup>th</sup> century

Arabians had direct route to China for cassia.

China was obtaining spice from East India (Indonesia)

Cloves used by those addressing the emperor in the Han dynasty (206–220)

Arabs began trading directly with East India through Malacca, Sunda, and other straits.

Constantinople, now Istanbul, founded by Constantine (272–337; emperor in 324) rose as the greatest trading center of the Middle-East

Spices (especially cloves, pepper, saffron, nutmeg) become great source of wealth in the 4<sup>th</sup> to 5<sup>th</sup> century.

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## Byzantine Empire & Constantinople

Official capital of the Eastern Roman, or Byzantine, Empire from 395–1453, Constantinople was for many centuries a focal point of spice trade routes between East and West.



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# Tropical Horticulture: Lecture 35

## Middle Ages

Commerce between Europe and East limited  
Moslem Arabs controlled the spice trade  
Venice became great power and controlled the Adriatic and grew rich based on its trade with the east  
Information on spices came from famous travelers  
Rabbi Benjamin (1160–1173) Europe, Africa, and Asia  
Marco Polo (1254–1324) Venetian visited the Kublai Khan in China and brought back secret sources of spices  
Describes Silk Road and sea routes to India  
Plague outbreaks in 14<sup>th</sup> century increased value of spices

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## Marco Polo (1254–1324)



His accounts of the spices and riches of the Orient stimulated the great age of exploration



Marco Polo dictating his memoirs from a prison cell in Genoa, 1298

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Literature abounds with reference to spices:  
Chaucer (1349–1400)  
Boccaccio (Decameron ) 1313–13750  
Arabian Nights  
Shakespeare (1564–1616)

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**Genoa**



Toward the end of the 13<sup>th</sup> century Genoa enjoyed a great boom in trade, of which spices formed an important part.

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Spices were in demand in medieval Europe to mask the unpleasant odor and taste of decomposing food

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**Witches, Herbs, and Magic Potions**

In the Middle Ages, European superstition linked witches and herb women with magic potions, which allegedly included snakes, chickens, and herbs such as anise.



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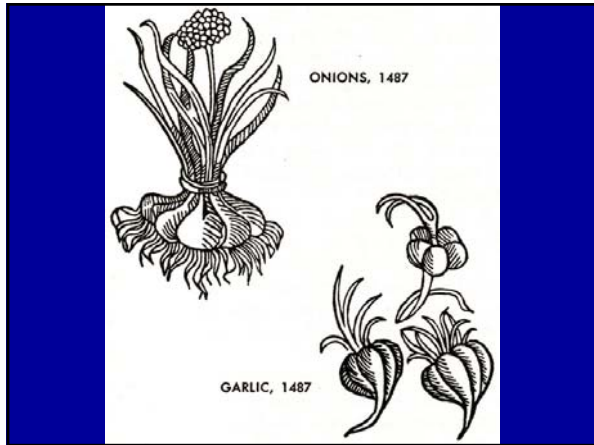
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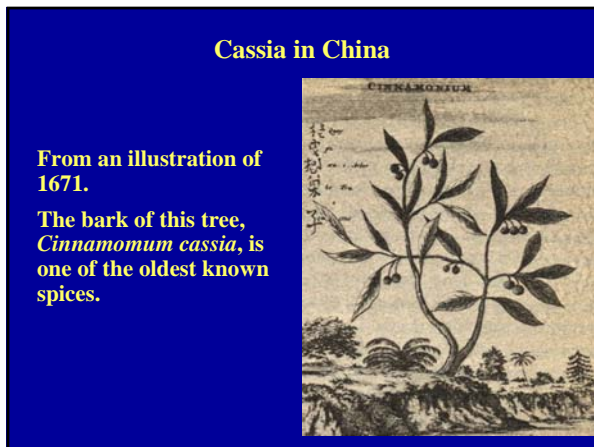
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**Collection of frankincense**

This 16<sup>th</sup> century illustration portrays the collection of the amber-colored gum as it oozed from the bark of the frankincense trees in southern Arabia.



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**Age of Exploration**

Medieval world saw spice trade of East and Middle East dominated by Moslem merchants.

Eastern pivotal points were Calicut, Columbo, and Malacca.

Mideast markets were Constantinople via India and the Far East to Hormoz in the Persian Gulf and Alexandria via the Red sea from Mecca.

Middle men were Venetians, who moved spices from the Mideast to the rest of Europe.

Conquest of Constantinople by the Turks in 1453 brought about the eventual decline of Venice as a great power.

The coup de grace was the rise of Portugal as a great sea power.

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**Portuguese Discoveries**

Prince Henry the Navigator b. 1394. Establishes navigational school at Sagres.

Convinced that India could be reached by sailing along coast of Africa

Rise in navigational charts, instruments, and ship building (Caravel)

1460—Portuguese reached Azores, Madeira, Senegal, Cape Verde Island

1471—Equator crossed

1487—Bartolemeu Diaz (1500?–1550) double cape of Good Hope proving Indian ocean is accessible by sea. (At the same time there were overland expeditions)

1487—Pedro de Covilhao goes overland and by sea to Calicut, Goa, and Hormuz and whets the Portuguese appetite for spices.

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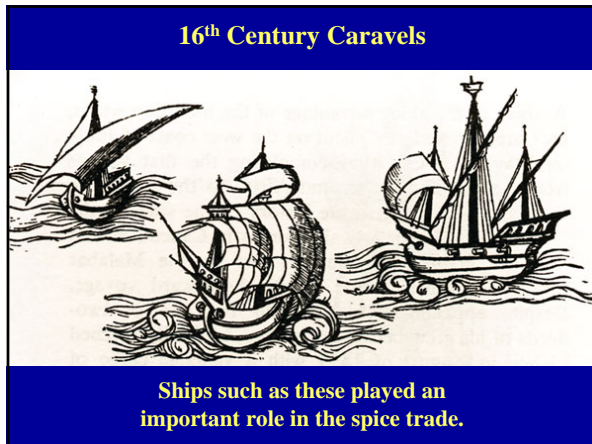
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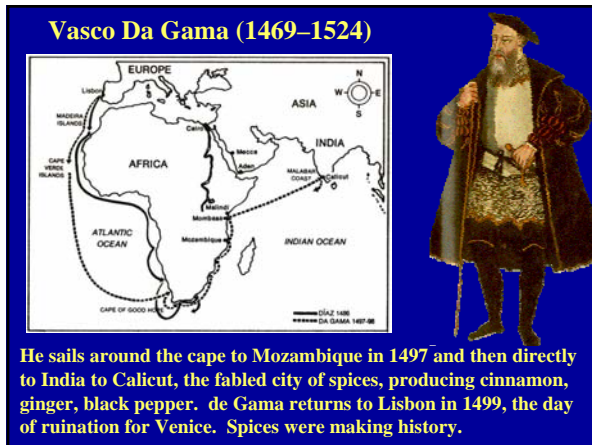
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**Portugal Masters of the Spice Trace**

**Pedro Alvares Cabral sails off course and discovers Brazil for Portugal, later Madagascar; returns with 6 of 13 ships and a cool reception; retires and establishes spice factories. An adventurer Amerigo Vespucci sent to Brazil and gives name to America.**

**Vasco da Gama in 1502 subjugates the Moslems and Portuguese establish control in India. (Goa was Portuguese until 1952)**

**Francisco de Almeida assumes title of Viceroy of India; title passes to Alfonse de Albuquerque who monopolizes the spice trade for Portugal by conquest.**

**Ferdinand Magellan circumnavigates the globe in 1519 for Spain. Fleet discovers spice islands.**

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**Christopher Columbus  
(1451–1506)**



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1492—Christopher Columbus (1451–1506) thinks Portugal errs in sailing East, and looks for a western route.

(Not a new concept: Strabo, 1500 years earlier notes: If the extent of the Atlantic was not an obstacle, we might easily pass by sea from Iberia to India still keeping the same parallel.)

By serendipity, Columbus discovers America in 1492.

Discovers *Capsicums* (red pepper) and *Pimenta dioica* (allspice).

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**In his journal he writes:**

*We ran along the coast of the island, westward from the islet and found its length to be 12 leagues as far as a cape which I named Cabo Hermoso (Cape Beautiful), at the western end.*

*The island is beautiful,...I believe that there are many herbs and many trees that are worth much in Europe for dyes and for medicines; but I do not know them and this causes me great sorrow.*

*There are trees of a thousand sorts, and all have their several fruits; and I feel the most unhappy man in the world not to know them, but I am well assured they are valuable.*

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# Tropical Horticulture: Lecture 35

*I desired to set out today for the island of Cuba, which I think must be Cipangu, according to the signs these people make, indicative of its size and riches,... It is better to go where there is great entertainment, so I say that it is not reasonable to wait, but rather to continue the voyage and inspect much land, until some very profitable country is reached, my belief being that it will be rich in spices.*

*That I have no knowledge of the products causes me the greatest sorrow in the world, for I see a thousand kinds of trees, each one with its own special trait, as well as a thousand kinds of herbs with their flowers; yet I know none of them.*

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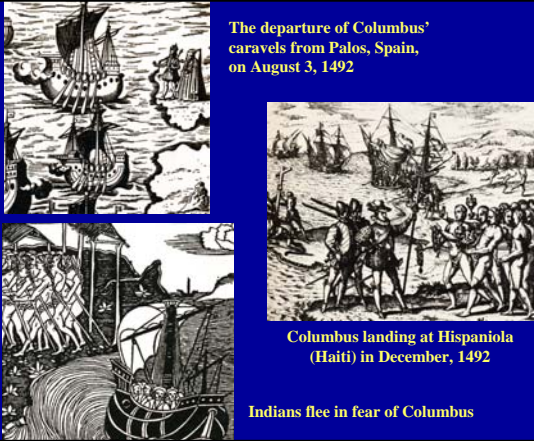
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The departure of Columbus' caravels from Palos, Spain, on August 3, 1492

Columbus landing at Hispaniola (Haiti) in December, 1492

Indians flee in fear of Columbus

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Quararibea funebria, AN OBSCURE SPICE  
Long before the arrival of the Spanish in Mexico, the Aztecs used these highly pungent flowers, known as "cacoaxochitl", to flavor their chocolate drinks.

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Tropical Horticulture: Lecture 35



Spices added flavor to drab European food in the early 16<sup>th</sup> century

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Bartering for spices in the market place of a German city in the 16<sup>th</sup> century

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16<sup>th</sup> century European cargo boats transporting spices and produce

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**European Spice Merchants**



In the 16<sup>th</sup> century, the Fugger firm of Augsburg traded in spices over the new sea route to India and acted as papal bankers.

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**Plague-doctor's Costume with Spice-filled Beak**

Mid-seventeenth century European costume worn by physicians attending plague patients.

The gown, shirt, breeches, boots, and gloves were all made of leather.

The long beaklike nose piece was filled with aromatic spices and the eyeholes were covered with glass.



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German spice warehouse of three hundred years ago



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### Europe Competition

**Francis Drake**

Circumnavigates globe

Discovers San Francisco in 1579

The defeat of the Spanish Armada by England is the beginning of the end for Spanish and Portuguese influence. England and the Dutch then dominate the Age of Exploration.

**Cornelium Van Houtman**

Breaks the Portuguese monopoly, dominates the East Indies, and makes a foothold in Brazil.

Two great spice trading companies emerge:

Dutch East India Company: monopoly in the spice islands (now Indonesia).

English East India Company

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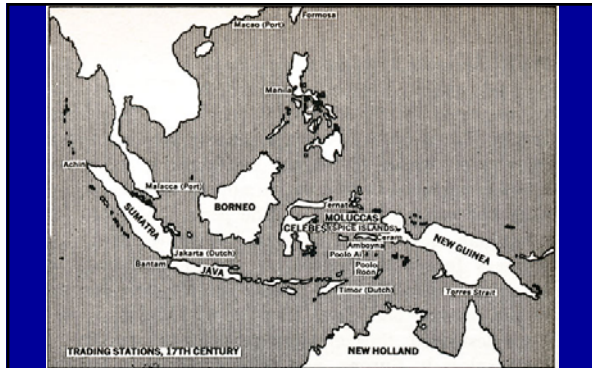
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Trading stations for spices in the East Indies in the 17<sup>th</sup> century

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