



Lecture 22
Islamic Influences on Western Agriculture



Islamic History

The Prophet Mohammed (570?–632) and the Rise of Islam
Expansion in the Arabian Peninsula and into Egypt
Conquerors of the Byzantine World
Expansion to India, inroads in China, Southeast Asia,
North Africa to Morocco
Incursion into the Iberian Peninsula and Southern France
Apogee in the 1200s when decline set in.
Spanish *reconquista*, expelled completely in 1492
Conquered by the Ottoman Turks (who had converted to Islam) and under Turkish hegemony from 1500 to 1918
Backward and poor until the discovery of oil
Present instability

Islamic Expansion and Breakup 622–865




The map illustrates the Islamic expansion from 622 to 865 AD. It shows the initial conquests from the Arabian Peninsula, the peak of the Umayyad Caliphate (661-750) under the first four caliphs, and the subsequent fragmentation into various dynasties including the Abbasids (750-800), the Umayyads in Spain (711-756), and the Sassanids (751-807). Major cities like Baghdad, Damascus, and Cordoba are marked. A legend identifies the different periods and regions.

Agricultural Technology

- Introduction of summer irrigation
- Wells and chain-of-pots
- Storage reservoirs and channels to divert water
- Introduced Indian and African summer crops
- Fertilization including manure, bones, crop residues, ashes and limestone
- New technologies such as sugar manufacture, development of plantation system via slaves.

Sakeih (Wheel of Pots)



A Persian water wheel powered by a man's legs

New Crops Introduced to Europe

- From India: sugarcane, rice, spinach, artichoke, eggplant, orange, lemon, coconut, banana, old world cotton
- From Africa: watermelon, sorghum
- From Middle East: durum (hard) wheat
 - Semolina: the coarsely ground durum wheat, from the Arab *semoules*
 - Couscous: steamed bits of semolina dough coagulated in balls, then dried, and sieved before cooking

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The interior of a pharmacy as represented in a manuscript of Treatise on Medicine by Dioscorides

The preparation of an aromatic wine to treat coughs; from an Arabic translation of Treatise on Medicine by Dioscorides

This miniature in an Arabic manuscript of the early 13th century depicts the preparation of drugs. A liquid remedy is being mixed over a fire in the open air, where flora and fauna symbolize the pharmaceutical bounty of nature. The bearded figure (right) holds out an ornate ceramic drug container. Manuscript was based on Galen's treatise concerning electuaries (lozenges).

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Preparation of theriac, a complex antidote that Galen's recommendation helped to raise to the level of an internationally renowned panacea.

Compounders measure ingredients from drug containers while assistants obtain supplies of crude drugs.

Gardens in the Islamic World

Gardens always important in the Mideast

Paradise means Garden

Ziggurats (temple towers), hanging gardens of Babylon



Source: Berrall (1966).

Koranic Influences

Surely the pious shall drink of a cup, whose mixture is camphor,
A fountain whereat drink the servants of God, making it to gush
forth plenteously...

...and recompensed them for the patience with a garden, and
silk;

Therein they shall recline upon couches
Therein they shall see neither sun or bitter cold

Sura 76 (Verses 5-6, 12-13, Arberry's translation)

This is the similitude of Paradise
 Which the godfearing have been promised:
 Therein are rivers of water unstalling,
 Rivers of milk unchanging in flavor, and
 rivers of wine—a delight to the drinkers,
 rivers, too, of honey purified,
 And therein for them is every fruit
 And forgiveness from their Lord.
Sura 47/16

And besides there shall be two gardens,
 Green green pastures,
 Therein two fountains of gushing water
 Therein fruits, and palm-trees, and pomegranates
 therein maidens good and comely ...
 houris, [nymphs] cloistered in cool pavilions.

Garden Images from Islamic Persia
 ...I saw, then, in a dream a tree of incomparable
 verdant freshness, beauty and magnitude;
 on this tree three kinds of fruit were growing
 that bore no resemblance to the fruits of this world
 and were plump like a virgin's breast:
 a white fruit, a red fruit and a yellow fruit, shining
 like stars on the green base of the tree...
Rabia Al Adawiya (c. 714–801)

Characteristics of Persian Gardens

- Flowers and birds
- Color, fragrances, and sounds (water, birds)
- Shade provides refuge from the sun
- Enclosed and walled
- Tend to be rectangular and formal
- Gardens of pleasure, for relaxation and enjoyment

Gardens of the Calif as-Muqtadir in Bagdad (917 CE)

...the New Kiosk is a palace in the midst of two gardens. In the center was an artificial pond of tine [or lead], round which flows a stream in a conduit, also of tin, that is more lustrous than polished silver. This pond was thirty cubits in length by twenty across, and round it were set four magnificent pavilions with gilt seats adorned with embroidery of Dabil, and the pavilions were covered over the gold work of Dabik. All round this tank extended a garden with lawns with palm-tree, and it is said that their number was four hundred, and the height of each was five cubits. Now the entire height of these trees, from top to bottom was enclosed in carved teak-wood, encircled with gilt copper rings. And all these palms bore full-grown dates, which in almost all seasons were ever ripe, and did not decay. Round the sides of the garden also were melons of the sort called Dastabuya and also other kinds of fruits.



Persian carpet in garden design

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Portion of a Persian garden carpet.
Trees are planted by the octagonal pools, and beneath their leafy boughs a checkerboard of flower beds is displayed.
Bordering the wide central channel are cypress trees alternately planted with small flowering varieties.
Many birds dwell in this garden.
(Metropolitan Museum of Art, Theodore M. Davis Collection)



Garden operation, Persian miniature



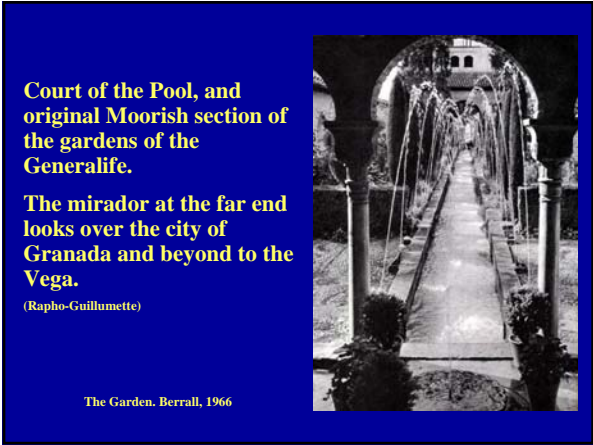
Source: Hyams

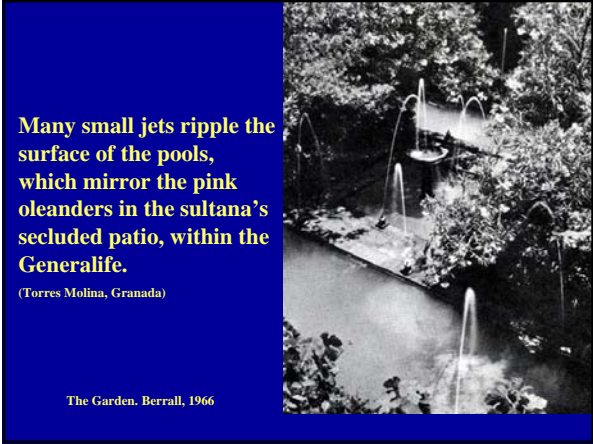


The Emperor Baber superintending the making of the Bagh-I-Vafa, or "Garden of Felicity," at Kabul, in 1508.
His memoirs tell of collecting plants and trees during military expeditions. (Victoria and Albert Museum, London)

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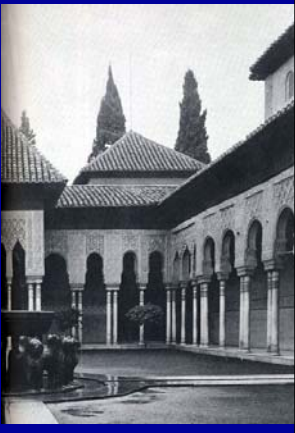


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Patio de los Leones

Part of the private quarters of the sultan's palace in the Alhambra.

Formerly decked with flowering plants, it now relies solely upon its few orange trees and great fountain basin for its garden effect.





Generalife water banisters, Granada (1972)

Patio de los Arrayanes within the Alhambra, Granada

The large expanse of this deep-green pool surrounded by its green myrtle hedges presents, as it always has, a serene welcome to the visitor.



Patio de la Reja

The small Patio de la Reja, within the private apartments of the Alhambra, has a beautiful view of the countryside outside.

An old cypress grows in each corner.




Re-created cloister garden of Cuza

A simple fountain, borders of purple iris, apple trees, and soft green grass offer beauty and serenity.

(Metropolitan Museum of Art, Cloisters Collection)

The Garden. Berrall, 1966

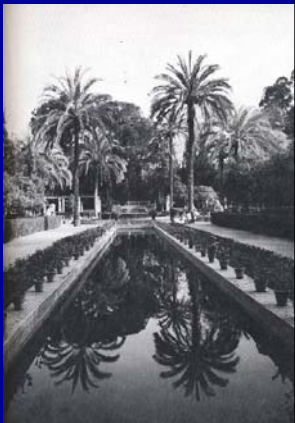


Maria Luisa park, Seville

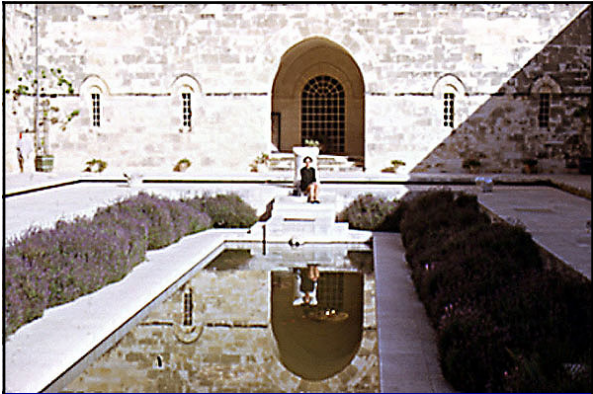
This is a 20th century creation, but its pools, its tile work, and many of its plant materials are of Moorish inspiration.

For ease of maintenance during long hot summers, the Spanish people cultivate many plants in pots.

The Garden. Berrall, 1966



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Rockefeller Museum, Jerusalem



**The Taj Mahal reflects its beauty in great sheets of water, and the scale of its garden approach adds grandeur.
Colorful flower beds repeat the gemlike quality of the interior.**
