



# BOTANICAL EXPLORERS

PEOPLE, PLACES & PLANT NAMES



HOW  
it all began



# SILK ROAD



## PRIOR TO 1450

- ROMAN EMPIRE extended around entire Mediterranean Sea
- Provided overland trade route to the east
- Fall of Constantinople to Ottoman Turks in 1453, impeding overland travel

# THE AGE OF DISCOVERY 1450-1750

Europeans continued to trade through Constantinople into 16th century

High prices, bandits, tolls, taxes propelled search for sea routes





# EASTERN COMMODITIES

## Tea, spices, silks, silver, porcelain

- Offering pepper to the king
- from *Livre des Merveilles du Monde*, 15<sup>th</sup> c  
Bibliothèque Nationale, Paris



- *Still life with peaches and a lemon*, 1636 (Chinese porcelain), Jurian van Streek



# THE AGE OF DISCOVERY Europe

Portuguese/Spanish  
pioneer new trade  
routes to the Indies by  
sea

Commercial  
expeditions sponsored  
by European  
monarchies

First voyages sailed  
south around tip of  
Africa and then east  
toward India





# THE AGE OF DISCOVERY America

- ▶ 1492-1502 Columbus and others believed they would reach Asia by sailing west
- ▶ Discovery of the "New World"

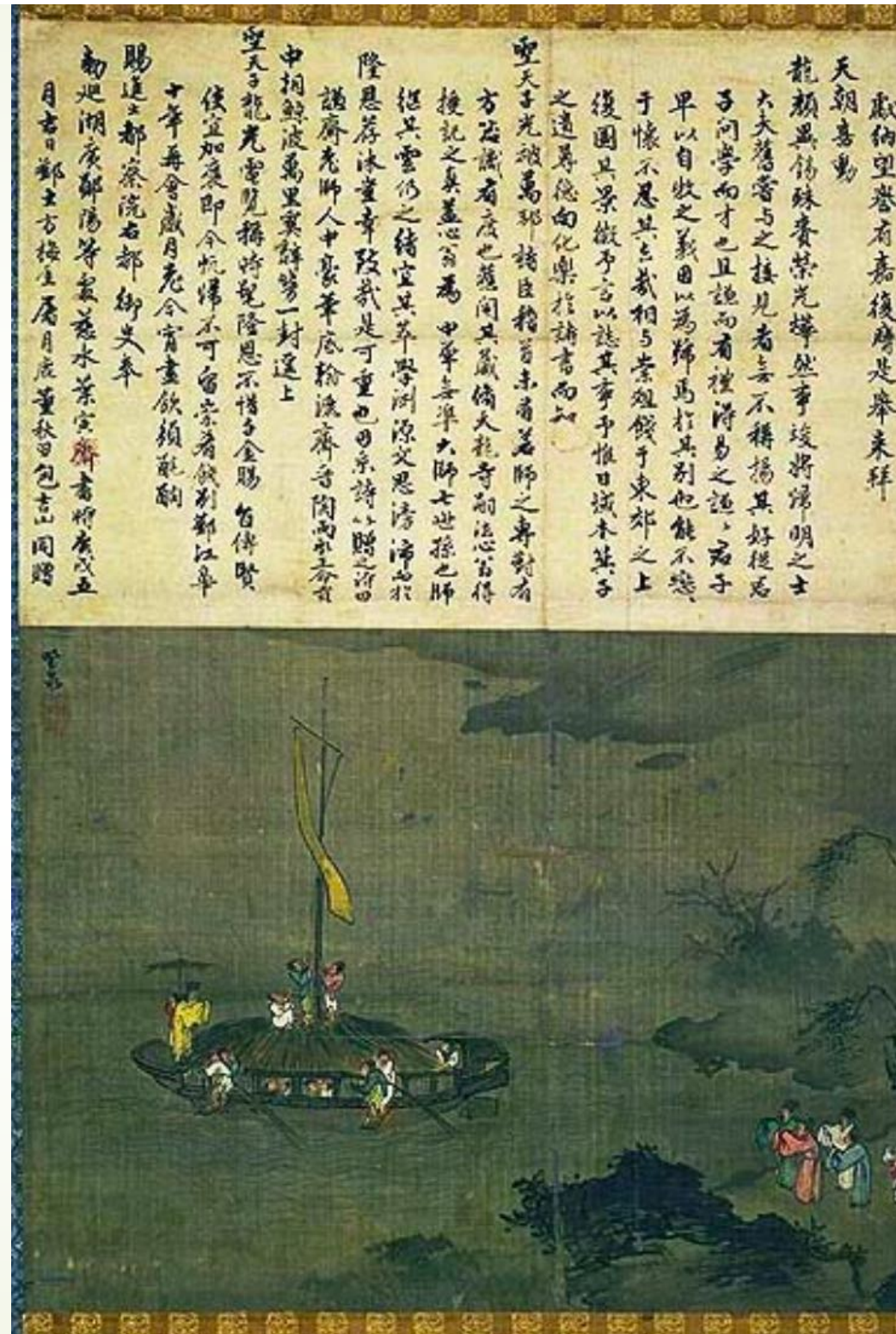




# AGE OF DISCOVERY Japan

Japan had no  
incentive to explore;

Wealthy trade partners,  
China and Korea





# AGE OF DISCOVERY Japan

- ▶ 1543 1st Portuguese ship arrives
- ▶ Daimyo (feudal lord) allows Portuguese into Japanese ports to promote trade and Christianity
- ▶ Portuguese trade ships sail from home port of Indian colony, Goa, to Japan other Far East ports, returning to Goa after 3-year journeys





# AGE OF DISCOVERY China

Treasure ships under  
command of Zheng He  
(in white)

Hongnian Zhang, oil  
painting of China's naval  
hero

Inland threats led to  
destruction of  
greatest navy in  
history



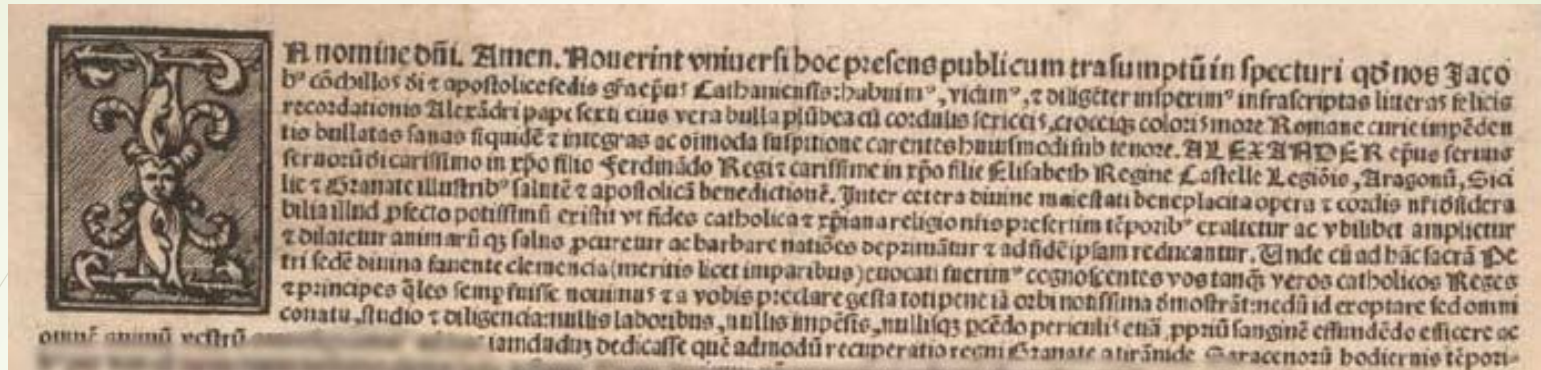




# DISCOVERY

of new lands inspired conquest and colonial dominion

Natural resources, Conversion, Enslavement



## RELIGION JUSTIFIED MEANS OF COLONIAL ACQUISITION

### 1455 ROMANUS PONTIFEX

- By Pope Nicholas V
- Portuguese monopoly on trade with Africa
- Authorizing enslavement of local people

### 1493 PAPAL BULL

- By Pope Alexander VI
- Justifying Christian European claims on land and waterways
- promoting Christian domination and superiority
- applied in Africa, Asia, Australia, New Zealand, the Americas.

## JESUITS 1540

New religious order  
founded in Spain,  
Society of Jesus  
(Jesuits), recognized  
by the Pope

Zealous global  
evangelists

Prominent educators,  
missionaries







# ACQUISITION

of colonies led to quest for crops

Feed slave populations, Home markets, Trade

# THE AGE OF DISCOVERY

Economic imperialism

The Columbian Exchange

- Breadfruit from Tahiti transplanted unsuccessfully in Caribbean as food crop for British plantation slaves
- Cassava/yuca from tropical America introduced to Africa by Portuguese circa. 1558. Now major food staple. Nigeria largest producer, Thailand largest exporter of the starch
- British tea smugglers in China initiated tea industry in India and Ceylon

# COLUMBIAN EXCHANGE

Before Columbus  
no oranges in  
Florida

*Citrus sinensis* from Southeast Asia





# COLUMBIAN EXCHANGE

Before Columbus  
no bananas in  
Ecuador

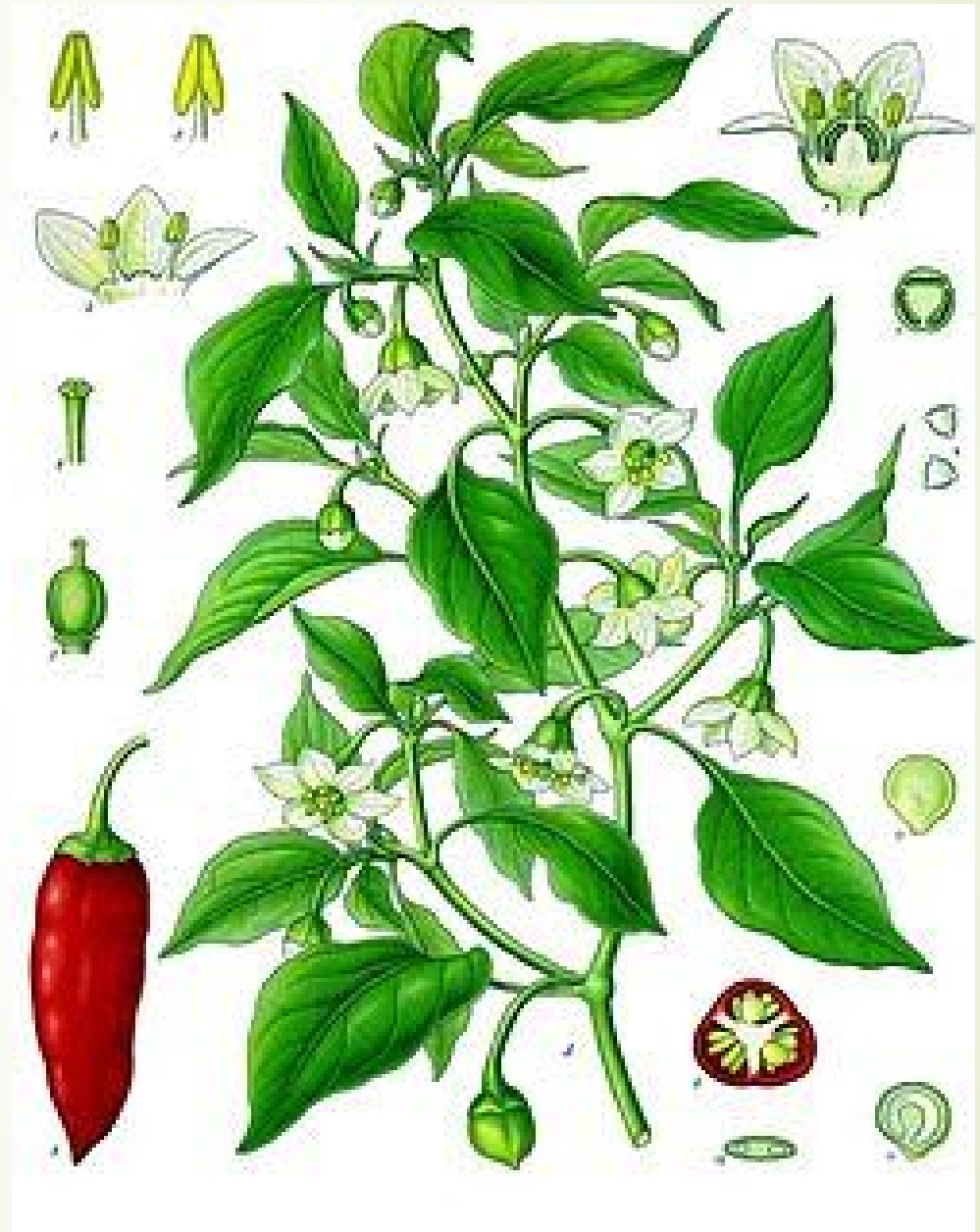
Genus *Musa* from South Asia and Southeast Asia



# COLUMBIAN EXCHANGE

Before Columbus  
no paprika in  
Hungary, no chili  
peppers in  
Thailand or India

*Capsicum anuum* from the Americas



# COLUMBIAN EXCHANGE

Before Columbus  
no tomatoes in  
Italy

*Solanum lycopersicum* from Mexico

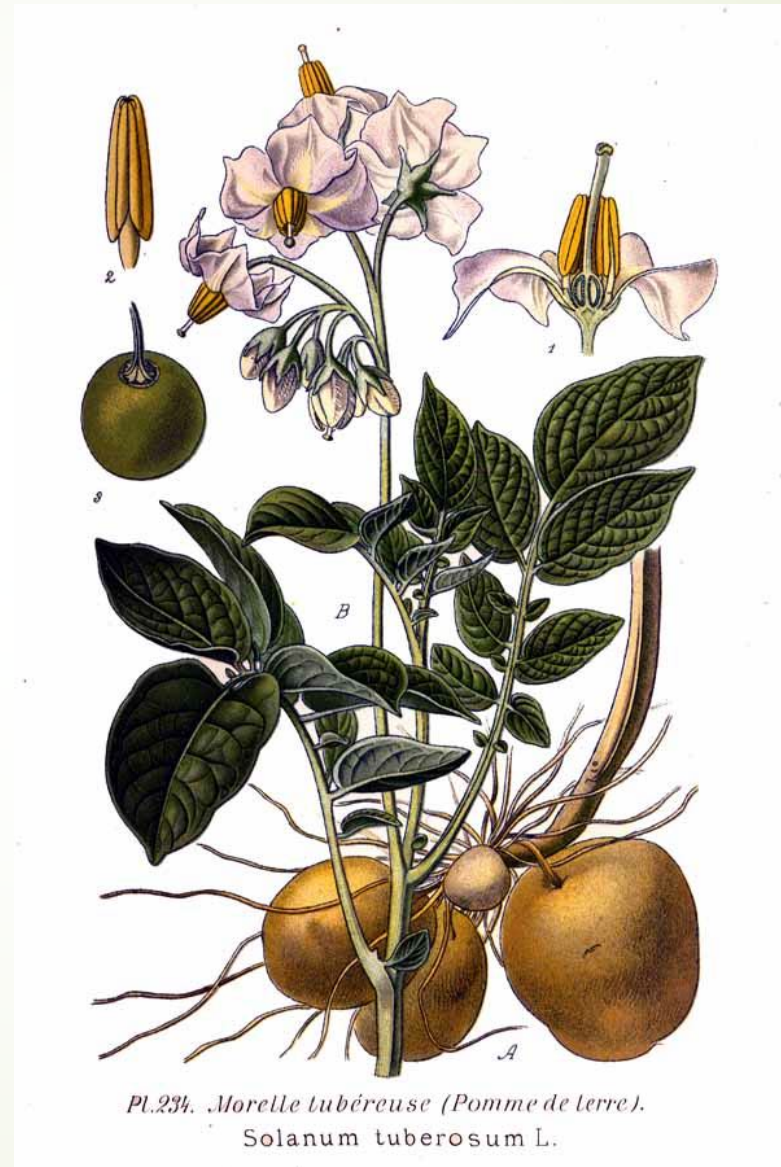




# COLUMBIAN EXCHANGE

*Solanum tuberosum* from the Americas

Before Columbus  
no potatoes in  
Ireland



# COLUMBIAN EXCHANGE

Before Columbus  
no coffee in  
Colombia

*Coffea Arabica* and  
*Coffea canephora* from Ethiopia



PLATE XI.—*Coffea arabica* (Coffee). (From Jackson: *Experimental Pharmacology and Materia Medica*.)





# ROYAL

Botanic Gardens & Private Nurseries  
testing grounds for foreign crops



Sponsor collectors

# LE JARDIN DU ROI

- 1626 founded by Louis XIII's physician as medicinal herb garden
- Recommended inventory of native and exotic plants for each colony and development of a reciprocal exchange
- Sent outstanding horticulturists on voyages of scientific exploration







## André Michaux 1746 – 1802

- ▶ French explorer and botanist, most noted for study of NA flora
- ▶ Appointed Royal Botanist under Louis XVI



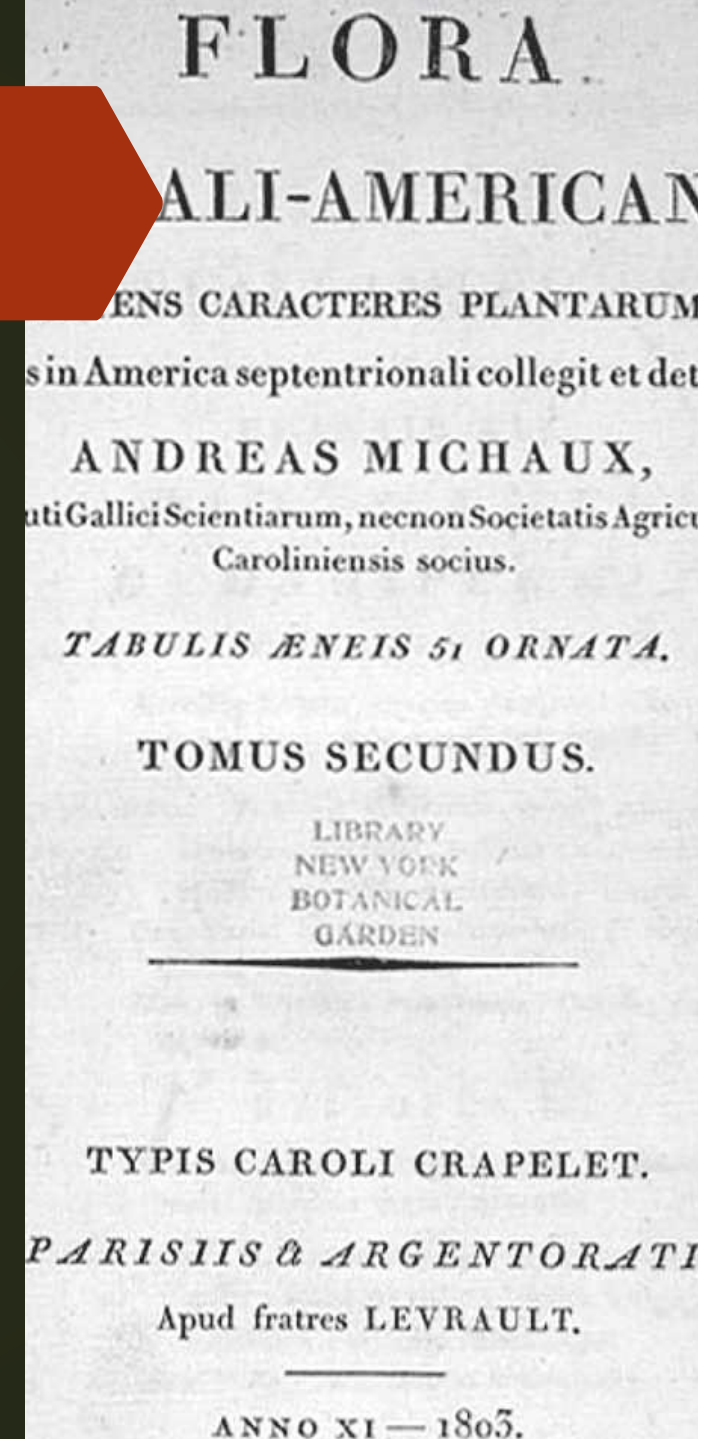
## André Michaux

- 1785 sent to America to make 1st organized investigation of plants that could be of value in French building, carpentry, medicine and agriculture
- 1786 established botanical gardens in N Charleston, SC, and in NJ on the palisades known as The Frenchman's Garden
  - (Machpelah Cemetery, North Bergen)
- Befriended William Bartram
- Marie Antoinette forwarded trees sent by Michaux to Schonbrunn Palace, Vienna



# André Michaux

- ▶ 1795 French revolution (1789-99) disrupted work, materials could not be shipped, salary stopped
- ▶ 1796 On return to France, belongings lost in shipwreck on Dutch coast, collections saved
- ▶ Penniless, awarded only small proportion of salary, 7 years in arrears
- ▶ Introduced many species to America, including: *Camellia*, *Osmanthus*, *Lagerstroemia*, *Albizia*
- ▶ 1800 departed on expedition to Mauritius and Madagascar
- ▶ 1802 Madagascar, died of tropical fever



Andre Michaux  
*Magnolia*  
*macrophylla*

BIGLEAF MAGNOLIA

Named by Michaux upon  
discovery in Carolina  
Peidmont and TN

Unusual deciduous tree  
with tropical look, rare  
even in NC

Napoleon's Empress  
Josephine among 1<sup>st</sup> to  
have *M. macrophylla* in  
her garden





Andre Michaux  
*Rhododendron*  
*catawbiense*

Named by Michaux  
upon discovery near  
headwaters of  
Catawba River





Andre Michaux  
*Lagerstoemia*  
*indica*

CRAPE MYRTLE

Geographic origin: India,  
China, Japan, southeast Asia

Introduced to southern US by  
Michaux

1759 Name in honor of Magnus  
von Lagerstroem, naturalist,  
director of Swedish East Indies  
Company

Common name from crepe-  
like, crinkled petals, and  
resemblance of leaves to  
*Myrtus communis*





Andre Michaux  
*Albizia julibrissin*

MIMOSA

SILK TREE

Native to Asia (Iran to  
Japan)

Widely planted ornamentally  
in US, naturalized in many  
areas , invasive in others

Genus name honors  
Florentine nobleman Filippo  
degi Albizzia, introduced  
genus to Italy in 1749.

*julibrissin* derived from the  
Persian name



# ROYAL BOTANICAL GARDENS AT KEW



- 1759 Mother of George III founds 9 acre botanic garden at Kew Estate
- Kew competes vigorously to be 1st European garden to display new species
- Becomes center for economic botany with practical relevance to Britain and colonies





# SIR JOSEPH BANKS (1743-1820)

- ▶ Wealthy entrepreneur and natural history enthusiast
- ▶ Participated in exploration voyage of the Endeavor with James Cook (1768-71)
  - ▶ Paid for passage of 8 scientists incl. “apostle” Daniel Solander, artists and secretary
- ▶ 1773 Banks superintends Kew
  - ▶ Instigated & paid for plant hunting in South Africa, India, Abyssinia, China and Australia
  - ▶ Plants and materials shipped from the Gardens to the colonies and vice versa.



# Francis Masson 1741-1805

Scottish botanist gardener

- First Plant Collector of Royal Botanical Garden at Kew
- 1772 sailed with James Cook on HMS *Resolution* to South Africa, meets CP Thunberg
- Stayed in SA until 1775, sending back over 500 species of plant to England
- 1778 -1804 Expeditions to Portuga/Spainl, Canary Islands, Azores, Antilles, South Africa, North America
  - Twice imprisoned by French pirates: Granada & Caribbean, losing collections
- 1804 Died in Montreal after short illness



Francis Masson  
*Zantedeschia*  
*aethiopica*

CALLA LILY

Afrikans name varkoor:  
pig's ear

Named for Italian  
botanist, Giovanni  
Zantedeschi, by  
German botanist Kurt  
Sprengel



Francis Masson  
*Strelitzia reginae*

BIRD OF PARADISE

Scientific name  
commemorates  
Charlotte of  
Mecklenburg-Strelitz,  
queen consort of George  
III

*Spathe*, perpendicular to  
stem, looks like bird's  
head and beak

When sunbirds perch on  
the spathe to drink  
nectar, petals open to  
cover birds' feet in pollen





# WILLIAM KERR d. 1814

Scottish gardener

1804-1812 sent to China  
by Joseph Banks

Collected mainly from  
local Chinese gardens  
and nurseries, findings  
included:

*Euonymus japonicus*

*Lilium lancifolium*

*Pieris japonica*

*Nandina domestica*

*Begonia grandis*

*Rosa banksiae*

*Kerria japonica*







William Kerr  
*Nandina Domestica*

## HEAVENLY BAMBOO

- ▶ Native to Himalayas east to Japan
- ▶ Genus name by Carl Peter Thunberg is Latinized version of Japanese name for the plant, *nan-ten*
- ▶ *Domestica* from Latin; cultivated, domesticated
- ▶ Not a bamboo
- ▶ 1804 1<sup>st</sup> specimen sent to London from Canton by Wm Kerr



## William Kerr *Rosa Banksiae*

- ▶ LADY BANKS ROSE
- ▶ One of earliest (May) flowering roses
- ▶ Fragrance of violets
- ▶ Named after Dorothea Banks, wife of Sir Joseph Banks







William Kerr  
*Lilium lancifolium*

■ Symbol of friendship

Chinese legend:

A hermit assisted a tiger by taking an arrow from its injured body. Before he died, he called upon the man to ensure their friendship lasted beyond his death.

The tiger's body then became a beautiful orange lily adorned with black markings.

Years later, when the hermit died, the tiger lily spread far and wide looking for his friend.





## ➤ WILLIAM KERR

- 1812 Sent to Colombo, Ceylon as Superintendent of gardens at Slave Island (suburb named for slaves held by Portuguese) and King's House
- 1814 Died in Colombo of opium addiction

# HORTICULTURAL SOCIETY OF LONDON

Gardening charity,  
founded 1804

Collect plant  
information and  
encourage the  
improvement of  
horticultural practice.

Chelsea flower show  
began in 1820s with  
series of floral shows  
at Duke of  
Devonshire's estate,  
Chiswick

Robert Fortune  
named Collector







# ROBERT FORTUNE

1812-1880

Scottish botanist

Horticultural Society of London names  
Fortune Collector for China

1<sup>st</sup> China expedition 1843-1846

2<sup>nd</sup> China expedition for British East India  
Co 1848-1851

3<sup>rd</sup> voyage to China 1853-1856

Expedition to Japan 1860-1862

Introduces 250 new ornamental plants to  
Britain, Australia, USA

# ROBERT FORTUNE

1843-1846 1<sup>st</sup> China  
expedition

Northern China largely  
unexplored

Attacked by bandits  
and pirates aboard  
junk

Suffered fever, tropical  
storms and typhoons

Foreigners not  
permitted to travel  
more than 30 mi from  
ports, however...

Learns Chinese,  
disguised as Sing Wah,  
passes into forbidden  
lands







## Robert Fortune *Rhododendron fortunei*

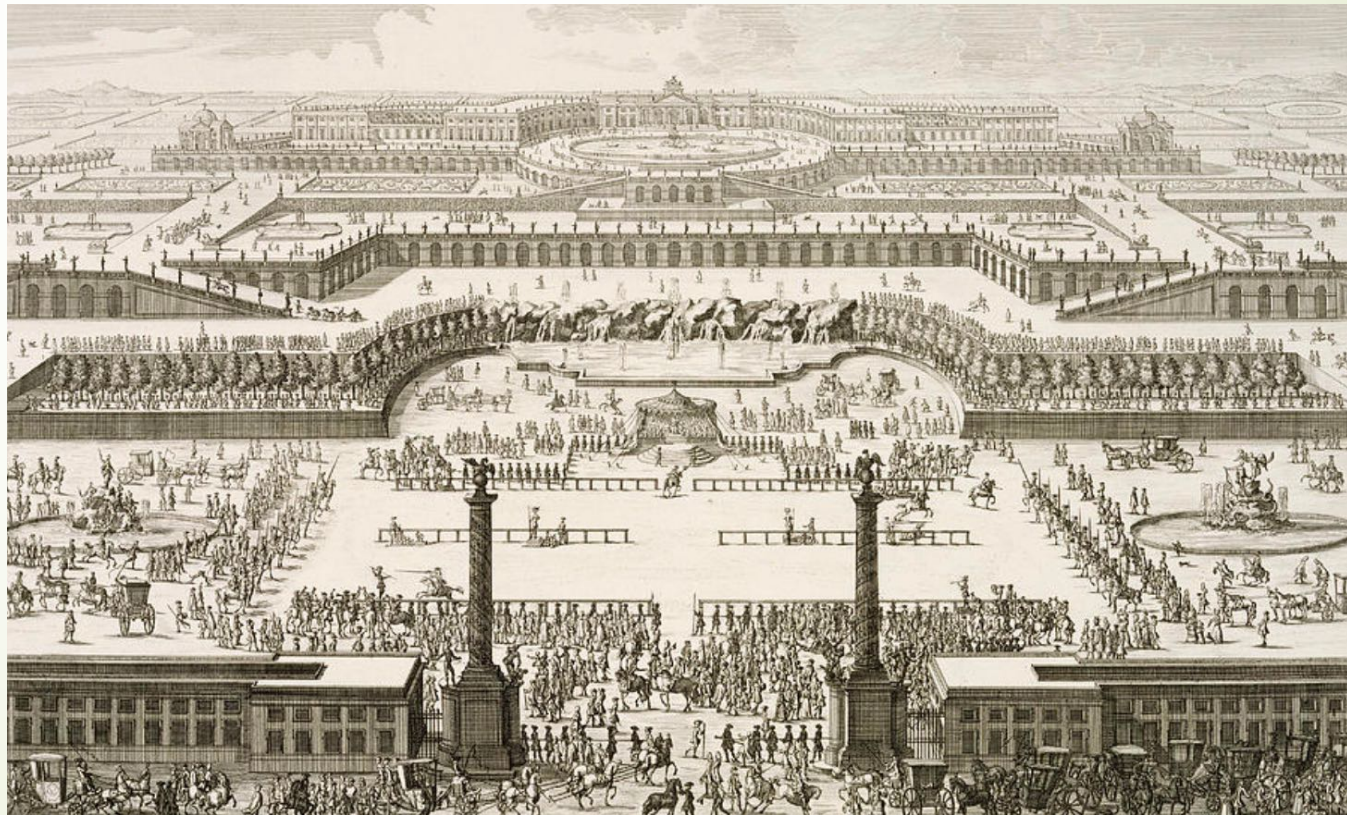
- Found on 3<sup>rd</sup> expedition in mountains of Eastern China
- 1<sup>st</sup> Chinese rhododendron introduced to Britain
- Seed collected sent to HS at Chiswick for propagation and distribution
- Hardy to zone 5



# SCHONBRUNN PALACE

## Symbol of far reach of imperial power

- 1637 Ferdinand II's widow laid out formal gardens
- 1728 Charles VI gave estate to daughter, Empress Maria Theresa.
- 1740-50 consort, Franz Stephan, added menagerie 1752 and botanic garden 1753.



Drawing by Johann Adam Delsenbach



# Nikolaus Joseph von Jacquin

- ▶ 1754-59 Emperor Franz Stephan authorized expedition to Caribbean by Nikolaus Joseph von Jacquin to acquire exotic flora and fauna
- ▶ Captured and imprisoned by British forces for a year in Central America
  - Aggressive British navy/privateers patrol Caribbean
- ▶ Upon release, visited Cuba and Jamaica to collect more plants before returning to Vienna



# LODDIGE'S NURSERY

- Conrad Loddiges (1738-1826), moved to England from Germany
- 1771 bought Hackney nursery of John Busch (Busch goes to Russia to design gardens for for Empress Catherine II)
- Loddiges introduced plants from N America from collections of A. Michaux and W. Bartram
- George William Francis (1800-1865) trained at Loddiges, emigrated to Australia, became first director of the Adelaide Botanic Garden



George Loddiges



A portrait of John Bartram, an elderly man with a receding hairline, wearing a dark, buttoned coat over a white shirt and cravat. The portrait is set against a dark background.

# John Bartram

## 1699-1777

- ▶ Pennsylvania Quaker
- ▶ America's 1<sup>st</sup> systematic plant hunter
- ▶ 1728 Bought land on Schuylkill River, created 1<sup>st</sup> American botanical garden

JOHN BARTRAM

FROM THE PORTRAIT PAINTED BY CHARLES WILLSON PEALE AND OWNED BY RICHARD W. LLOYD

# John Bartram

- Received recommendation to Peter Collinson, London Quaker wool merchant/botanist
- *Bartram's Boxes* sent to Collinson each fall (for 35 yrs) for distribution to clients such as Duke of Argyll and John Busch, founder of Loddiges Nursery
- Through Collinson, Bartram introduced to Linneaus, Fothergill, Catesby
- Appointed Botanist to George III, £50 stipend







## JOHN BARTRAM

- Collected in VA, western PA, Carolinas, GA, FL
- 1765 Bartram and son William collected throughout Georgia & Altamaha River
  - Found *Franklinia alatamaha*
  - *Nyssa sylvatica*
- Introduced approx 200 trees and shrubs to England, including:
  - *Kalmia latifolia*
  - *Acer saccharum*
  - *Viburnum dentatum*, *V. nudum*, *V. lentago*



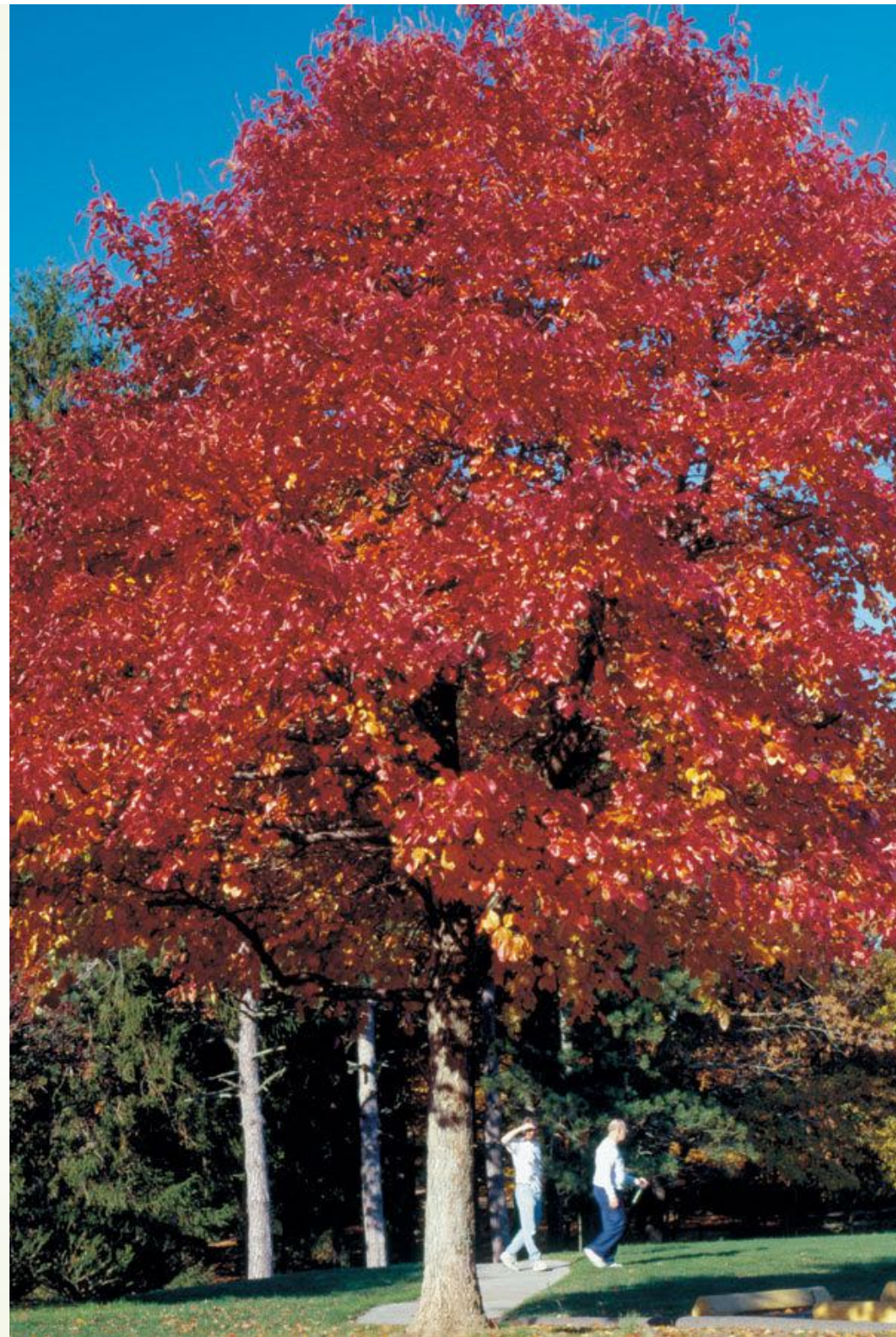
## John Bartram *Franklinia alatamaha*

- FRANKLIN TREE
- Grew wild only along the Altamaha River
- Species name has extra "a" –an alternate spelling for the river when tree was named
- 1773 William Bartram collected seed and grew the tree in Philadelphia
- Extinct in wild since 1803, all plants derive from the seed collected by Bartram
- Theaceae (tea) family, closely related to *Stewartia*
- Genus name honors Benjamin Franklin, reportedly friend of Bartram



# John Bartram *Nyssa sylvatica*

- SOUR GUM, TUPELO
- Primarily found in low wet woods, bottomlands and pond peripheries, but also on dry rocky wooded slopes and ravines
- Named for Nyssa, Greek mythological water nymph; *aquatica*; grows in swamps





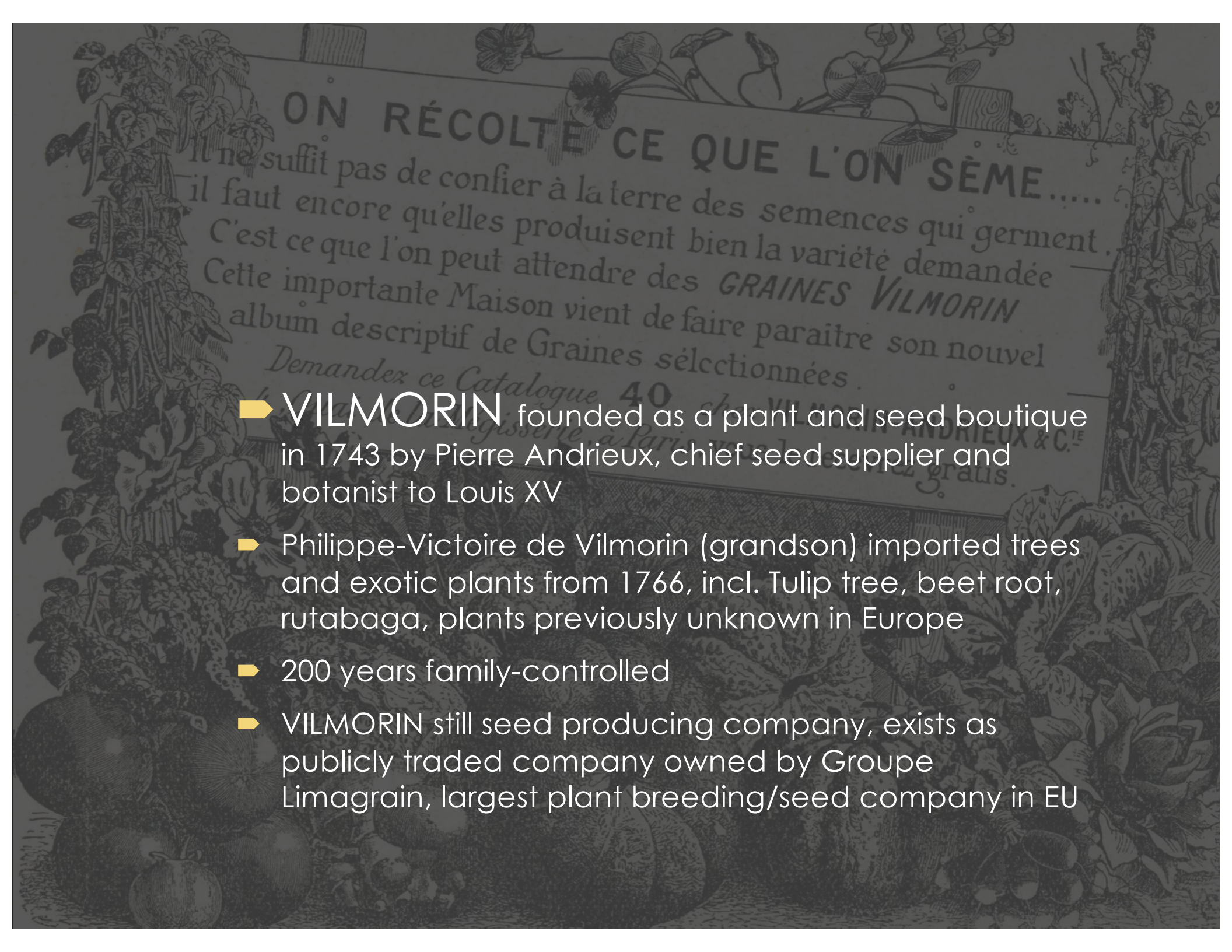


John Bartram  
*Kalmia latifolia*

## MOUNTAIN LAUREL

- Native to Eastern NA in rocky or sandy woods
- Genus name honors Pehr Kalm
  - Swedish-Finnish botanist, Linnaean Apostle
  - Sent to N America by Royal Swedish Academy of Sciences
- Specific epithet from Latin, *lati*; broad, and *folia*; leaf





ON RÉCOLTE CE QUE L'ON SÈME.....  
Il ne suffit pas de confier à la terre des semences qui germent.  
Il faut encore qu'elles produisent bien la variété demandée.  
C'est ce que l'on peut attendre des **GRAINES VILMORIN**.  
Cette importante Maison vient de faire paraître son nouvel  
album descriptif de Graines sélectionnées.  
Demandez ce Catalogue 40 chez VILMORIN ANDRIEUX & C.<sup>IE</sup>  
à Paris, rue de la Harpe, 155. Les exemplaires sont gratuits.

- **VILMORIN** founded as a plant and seed boutique in 1743 by Pierre Andrieux, chief seed supplier and botanist to Louis XV
- Philippe-Victoire de Vilmorin (grandson) imported trees and exotic plants from 1766, incl. Tulip tree, beet root, rutabaga, plants previously unknown in Europe
- 200 years family-controlled
- VILMORIN still seed producing company, exists as publicly traded company owned by Groupe Limagrain, largest plant breeding/seed company in EU

## BEES LTD

Arthur Kilpin Bulley  
(1861–1942)

1897 60 acre Ness  
Gardens created (now  
University of Liverpool  
BG)

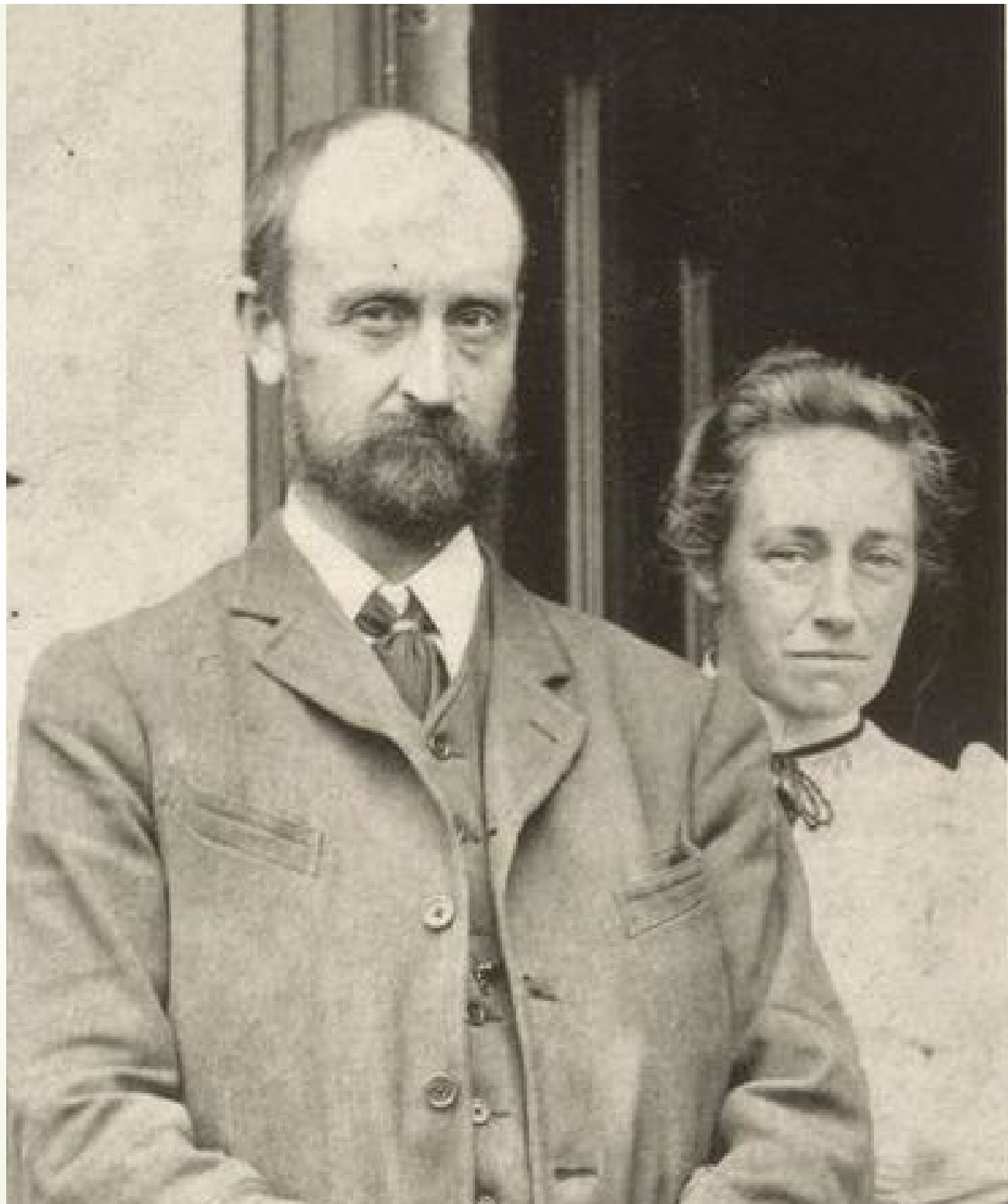
1904 commercial  
nursery at Ness; Bees  
Ltd, supplies seeds for  
botanical gardens,  
nurseries, home  
gardeners

Professional collectors:

George Forrest; China

Frank Kingdon Ward;  
Eastern Himalayas

Reginald Farrer

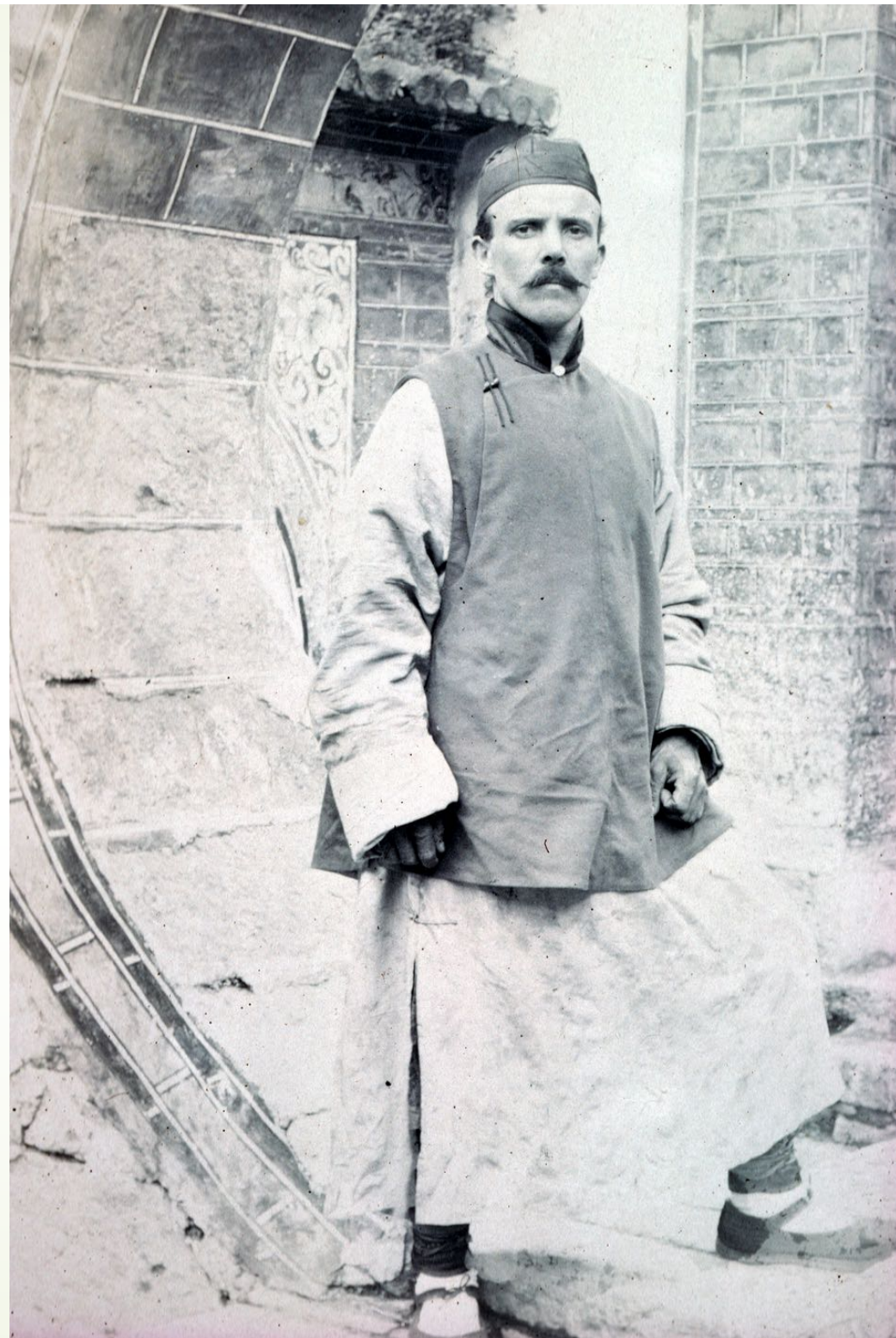




# George Forrest

## 1873-1932

- ▶ 1904 Recommended to Arthur K Bulley for expedition to China
- ▶ 1905 Tibetan Rebellion; only survivor of massacre of Catholic missionaries/ converts
  - ▶ Locals hide, disguise and smuggle F out of the region, continues collecting till late 1906.
- ▶ Makes 6 more expeditions to China
- ▶ 1930-1932: last and most productive trip, dies (heart failure) in China



# GEORGE FORREST

Discovers over new 1200 species

Extent of collections thanks to well trained helpers

Recruited collectors familiar with land from native tribes

Relied on core group, headed by Lao Chao to scour mountainsides at different times of year, often in Forrest's absence

Could amass more plant material than rival collectors

Forrest with chief collector, Lao Chao, from 1906 on





# GEORGE FORREST

Camp in Yulong Xue Shan mountains during 1st expedition



GEORGE FORREST

*Rhododendron diaprepes*, SW Yunnan found 1913





# GEORGE FORREST

Packing crates of seeds and specimens ready for dispatch, collected by Forrest during 1913



## KNIGHT & PERRY'S EXOTIC NURSERY

- 1808 Joseph Knight acquires grounds in Chelsea for nursery and showrooms
- 1828 adds conservatory
- 1829 Consortium of nurserymen send Wm Baxter to Australia
- 1830's nephew, Henry Knight collects in FL,AL
- 1855 sells to James Veitch







## VEITCH NURSERIES

- ▶ Largest family operated nursery in Europe during 19<sup>th</sup> c
- ▶ Noted for profuse new plant introductions of previously unknown species, newly bred varieties, propagation of exotics, and employment of famous plant hunters:
- ▶ 1969 Firm sold to St. Bridget Nurseries, no longer functioning

# E. H. WILSON

## 1876-1930

Offered collector position with Veitch & Sons in China to find *Davidia*

1<sup>st</sup> Expedition; traveled to Yunnan to meet Augustine Henry via Arnold Arboretum, San Francisco, & Hong Kong







E.H. Wilson  
*Davidia involuocrata*

► DOVE TREE

► Native to woodlands in central China

► Showy parts of bloom are large oval-rounded white involuocrate bracts, which hang over flower clusters in April-May.



# E. H. WILSON

*Actinidia deliciosa*, Kiwi  
Fruit - not native to New  
Zealand

(previously described  
by Pierre d'Incarville)





# E. H. WILSON

1903 2<sup>nd</sup> expedition for  
Veitch:

Discovered *Lilium  
regale*

Trumpet flowered lily,  
native to western  
Szechuan, China

Flowers strongly  
fragrant, especially at  
night

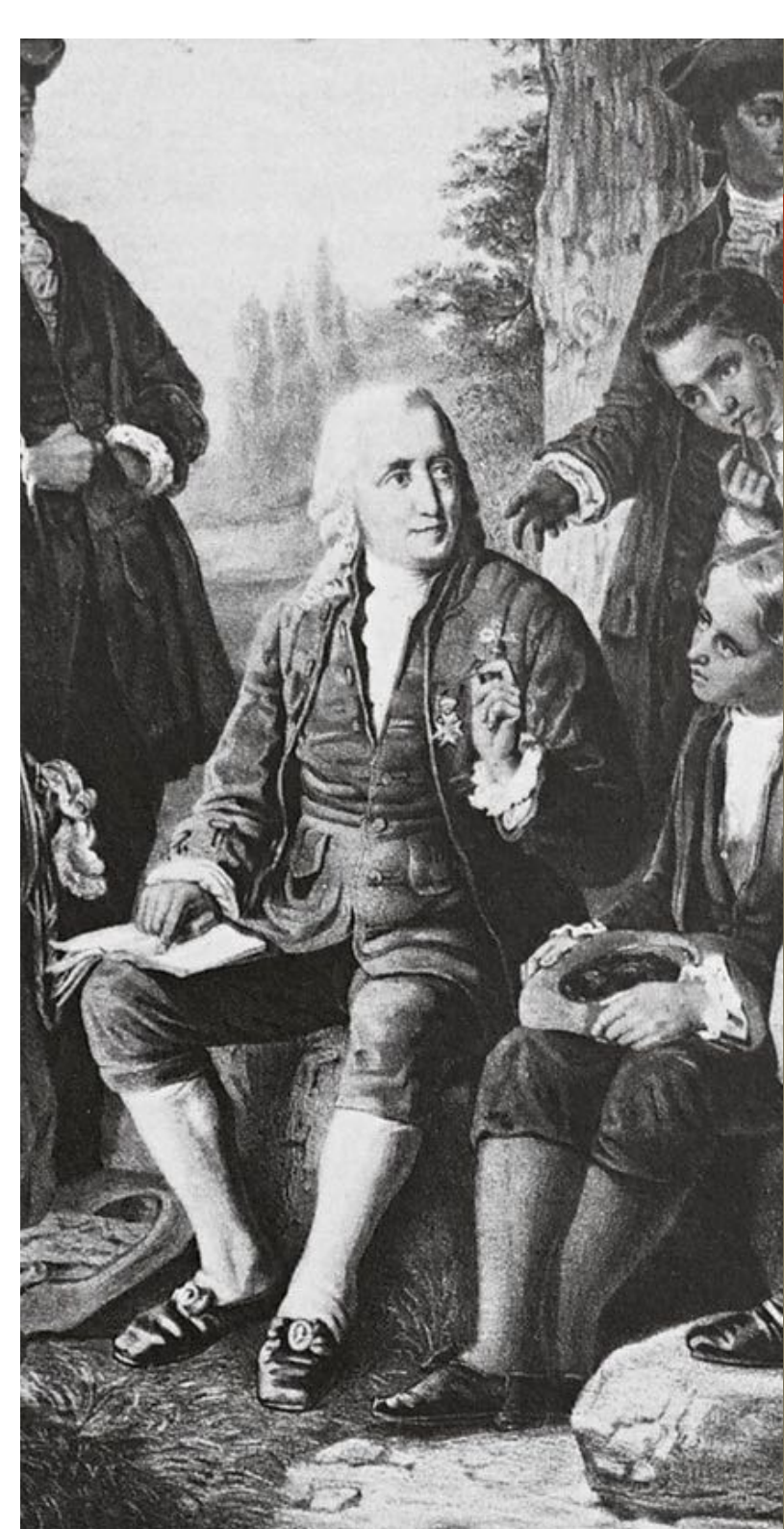




## E.H. WILSON *Kolkwitzia amabilis*

- ▶ Twice discovered, 1st by Jesuit Giuseppe Giraldi in Shensi, again in Hubei province, by E.H. 'Chinese' Wilson
- ▶ 1901 Wilson sent plant material to Veitch Nurseries; did not flower there till 1910
- ▶ popular in US following World War I
- ▶ Named for Richard Kolkwitz, professor of botany in Berlin
- ▶ Latin *amabilis*; lovely





# CARL LINNAEUS

1707-1778

Father of Modern Taxonomy

- ▶ As professor at Uppsala, trains entire generation of botanist explorers, sent 17 "Apostles" to far reaches to find all worldly species
  - ▶ Only 9 return alive
- ▶ 1753 publishes Species Plantarum using binomial species names (1000 genera, 6000 species)

# EUROPEAN EAST INDIA COMPANIES

Iberians established colonies in the Americas, India, Africa

Northern Europeans invented capitalism:

East India Companies set up by English 1600, Dutch 1602 and French 1642 to finance exploration

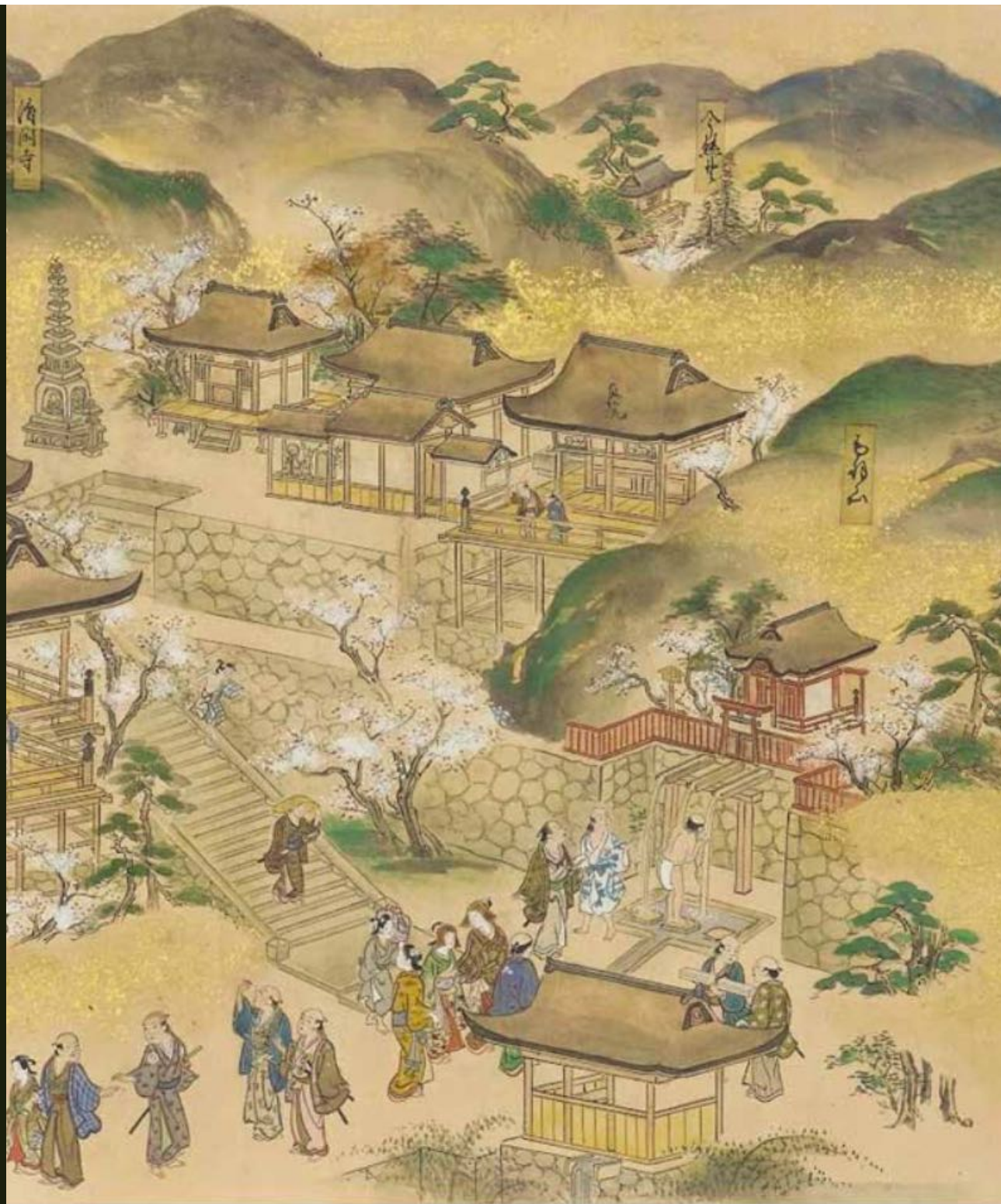
Employed physicians/surgeons for medical and botanical purposes





# JAPAN

- ▶ 1580 Portuguese given jurisdiction of Port of Nagasaki, de facto monopoly on silk trade with China
- ▶ 1634 *Shōgun* ordered construction of artificial island to accommodate Portuguese traders and prevent spread of Christianity
- ▶ Many edicts to moderate contact between Japan and other countries
- ▶ Due to uprising of Christian population in Shimabara-Amakusa region, government expelled Portuguese in 1639





# Dejima

## 1634-1853

- ▶ 1643 Local merchants dig canal through small peninsula in Nagasaki bay creating 2.2 acre, fan-shaped artificial island
- ▶ After expulsion of Portuguese, only Chinese and Dutch ships permitted into Nagasaki harbor with VOC exclusive trade in Japan
- ▶ Later integrated into Nagasaki through land reclamation





# JAPAN

- Japanese banned from Dejima
  - Except interpreters, cooks, carpenters, women of pleasure
- Once a year Europeans allowed to attend festivities at Edo (Tokyo) under escort
- Physicians Engelbert Kaempfer, Carl Peter Thunberg, Philipp Franz von Siebold called to attend Japanese patients
- Dejima became known as center of medicine, military science, astronomy



# CARL PETER THUNBERG 1743-1828

- Swedish botanist, doctor, explorer, author, Linnaean Apostle, appointed surgeon to VOC
- Assigned to Dejima, 1<sup>st</sup> goes to South Africa to learn Dutch
- Meets Francis Masson from Kew in SA
- Spent 3 years collecting at Cape of Good Hope finding about 300 new plant species
- Thunberg and Masson make outstanding discoveries including *Strelitzia*





A black and white portrait of Carl Peter Thunberg, an elderly man with a receding hairline, wearing a dark coat over a white cravat and a patterned waistcoat. He is looking slightly to the left of the viewer.

# Carl Peter Thunberg

## 1743-1828

- 1775 travelled to Dejima with VOC, movements restricted
- Collected seed and plant specimens from fodder for island livestock
- Persuaded interpreters/local physicians to bring botanical specimens
- Later, travelled to London, made himself known to Banks
- Returned to Sweden, wrote a *Flora Japonica*
- Succeeded Linnaeus as Professor of Botany at Uppsala University.

Carl Thurnberg  
*Thunbergia*  
*alata*

▶ BLACK-EYED SUSAN  
VINE

- ▶ Species name from Latin *alatus*; winged
- ▶ Refers to winged petioles





Carl Thunberg  
*Rosa rugosa*

- RUGOSA ROSE
- Very hardy species of rose, growing on the coast, often in sand dunes
- In Japanese, called *hamanasu*; shore eggplant, or *hamanashi*; shore pear
- Leaves are distinctly corrugated or rugose, hence specific epithet







Carl Thunberg  
*Lespedeza thunbergii*

- BUSH CLOVER
- Genus name honors Vincente Manuel de Cespedes, Spanish Governor of West Florida from 1784 to 1790
- Specific epithet honors Carl Peter Thunberg 1743-1828, collected plants of this species in Japan in 1775-76.



Carl Thunberg  
*Spiraea*  
*thunbergii*

BABY'S BREATH SPIREA

- Native to Japan and China
- Popular landscape shrub in USA
- Approx 80-100 species in genus

- Genus name from Greek *speiraira*; a plant used for garlands







## Philip Franz von Siebold 1796 – 1866

- German medical doctor, applied for position with Dutch VOC, entered service 1822
- Lived in Dejima as new resident physician/scientist
- Was invited by Japanese scientists to show them marvels of western science, in return he learned about Japanese and their customs
- Gained favor/ability to leave island



# Philip Franz von Siebold 1796 – 1866

- Established medical school with 50 students appointed by the Shogun
- Students brought botanical samples/seeds
- School became meeting place for scholars
- Dutch language became Japanese academic *lingua franca* for a generation



# Philip Franz von Siebold

- ▶ Lived with Japanese partner Kusumoto (Otaksa), daughter, Oine
  - Oine, 1<sup>st</sup> Japanese woman known to receive physician's training
- ▶ In small home garden, amassed over 1,000 native plants
- ▶ Smuggled contraband tea seeds to botanical garden in Batavia, starting tea culture in Dutch Java
- ▶ 1826 Obtained forbidden map of Japan and Korea from court astronomer on journey to Edo
- ▶ Possession of map discovered, accused of high treason
- ▶ 1829 Expelled from Japan







Philip Franz von Siebold  
*Hydrangea macrophylla*  
'Otaksa'

- ▶ 1858 banishment lifted
- ▶ 1859-61 returned to Japan, but Dutch VOC no longer wished to sponsor "troublemaker"
- ▶ 1861 Collaboration with George Hall and Robert Fortune





Philip von Siebold  
*Hosta sieboldiana*

HOSTA, PLANTAIN LILY,

- ▶ Japanese name GIBOSHI
- ▶ Genus name honors Austrian botanist Nicholas Thomas Host
- ▶ *H. sieboldiana* known for glaucous waxy leaf coating giving blue appearance to leaves



Philip von Siebold  
*Magnolia sieboldii*



OYAMA MAGNOLIA

- Vase-shaped, deciduous small tree native to understory forested areas in Japan, SE China and Korea
- Genus name honors Pierre Magnol, French botanist 1638-1715

# CHINA





# CHINA

1688 Jesuits arrive in Peking

Emperor wishes to learn new western mathematics and astronomy

Awarded house within imperial city walls after curing emperor of malaria

1703 Jesuits given land to build church



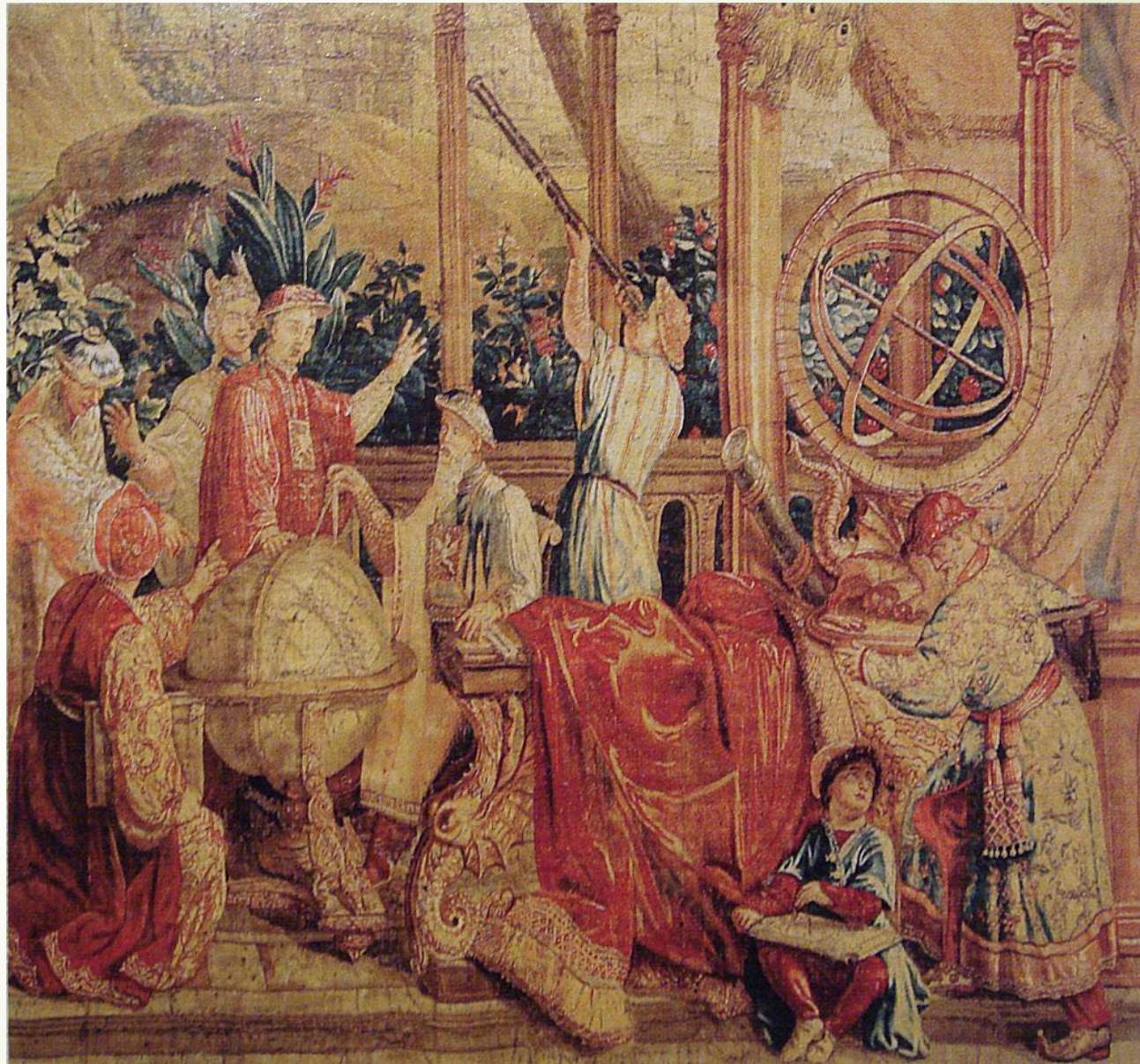


PIERRE  
D'INCARVILLE  
1706-1757

French Jesuit, botanist  
& western glass  
specialist

1740 At request of  
Emperor Qianlong  
D'Incarville and de  
Brossard sent to assist  
in glass making,  
charged with  
converting Emperor  
while in his employ

Named  
correspondent for  
Academie des  
Sciences





PIERRE  
D'INCARVILLE  
1706-1757


Denied access to imperial gardens until showing sensitive plants (*Mimosa pudica*) to Emperor, introduces other European plants

Describes and sends seeds of several unknown plants to Europe

1757 dies in Peking







## Pierre d'Incarville *Ailanthus altissima*, Tree of Heaven

- ▶ Name derived from Ambonese (South Moluccan) word *ailanto*; heaven-tree or tree reaching for the sky
- ▶ Latin *altissima*; tallest
- ▶ Host plant for silk moth
- ▶ Brought from China to Europe in 1740s, to US in 1784 - *chinoiserie* dominated European arts
- ▶ Served as central metaphor for *A Tree Grows In Brooklyn* by Betty Smith
- ▶ Beautiful garden specimen with suckering habits and foul odor but used extensively as street tree during 19th century



# CHINA

Emperor Daogang

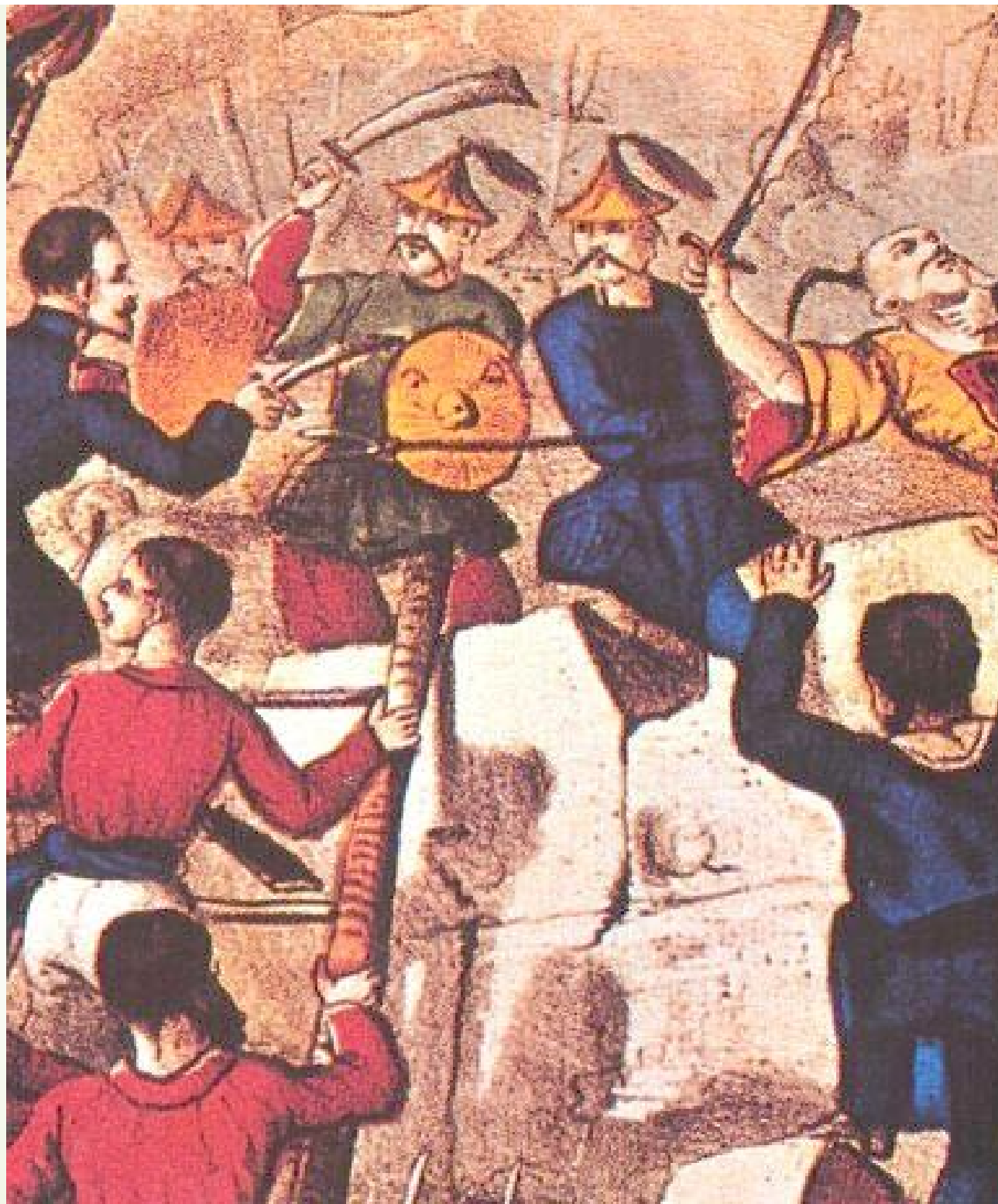
1821-1850 "Reign of  
external disaster  
and internal rebellion"





# CHINA

- ▶ 1827 European missionaries expelled, lands confiscated
- ▶ Opium introduced to China by Britain to pay for tea
- ▶ 1839 Chinese gov't confiscates British opium warehouses
- ▶ 1<sup>st</sup> Opium War to 1842
- ▶ China forced to pay indemnity, cede Hong Kong, exclusive trade rights & diplomatic immunity – other nations soon granted same





ROBERT  
FORTUNE  
1812-1880



1848 British East India Co hires Fortune to steal secrets of tea horticulture and manufacturing

In disguise as Sing Wah, heads to tea region

Indian tea industry established through transport of over 20,000 plants in WARDIAN CASES invented by Dr. Nathaniel Bagshaw Ward 1791-1868





Robert Fortune  
*Camellia sinensis*

## TEA

- Genus name honors Georg Joseph Camel 1661-1706, German Jesuit missionary to Philippines, noted for work on Oriental plants
- Most commercial cultivation occurs in China, India, Burma and Sri Lanka
- This species also grown ornamentally for excellent foliage and small fall flowers