I. The Early Days
A. Folk Taxonomy

Theophrastus (ca. 371-286 BC)
II. Herbalists

C. Dioscorides (1st Cent. AD)
De Materia Medica
Dill (anti-gas, indigestion soother)  Cumin (parasites)

II. Herbalists

D. Others (15th-17th Cent)

Badianus Manuscript
(1552, rediscovered in 1929)

*Calliandra anomala*; stalky comsilk
flower; Tlacoxiloxochitl

For persistent cough.
-Drink juice of the root.
-Mix some of juice with honey and
tear on throat.

Fls of this plus water were said to
improve eyesight and heal ulcers.
Badianus Manuscript (1552, rediscovered in 1929)
(Mixture including Pinus sp.)
For lightning strike.
-Drink made from lvs of a pine and other species.

II. Herbalists
E. The Badianus Manuscript
Badianus Manuscript (1552, rediscovered in 1929)
(thistle, pepper)
For “Black Blood” (depression).

Badianus Manuscript (1552, rediscovered in 1929)
(Urtica chichicaztli; water-nettle)
For nose bleeds (Atzitzicaztli)
-Grind juice w/ salt in urine, milk.
-Pour into nose to stop flow of blood.
Caesalpino (1519-1603)
De Plantis Libri

Tournefort (1656-1708)
Institutiones Rei Herbariae

Ray (1628-1705)
Historia Plantarum & Synopsis Methodica Stirpium Britannicarum
**Class V: Pentandria.**

Flowers with 5 stamens

Order Monogynia...with 1 pistil

Polyomenal. He sticks a "specific epithet" for ease of use.

Linnaeus: *Species Plantarum* (1753)
Linnaeus (1729)

The flowers' leaves . . . serve as bridal beds which the Creator has so gloriously arranged, adorned with such noble bed curtains, and perfumed with so many soft scents that the bridegroom with his bride might there celebrate their nuptials with so much the greater solemnity . . .
One of many of Linnaeus’s critics: Johann Georg Siegesbeck (1686-1755), botanical garden in St. Petersburg

Objections seemed to have been two-fold:
1. Artificial.
2. Sexual System and his metaphors:
   - e.g., Class Pentandria and order Monogynia described as “5 husbands in the same marriage”

Siegesbeck wrote that such
   “monstrosities in which several males with one female would not be permitted in the vegetable kingdom by the Creator”

Also:
   “Who would have thought that bluebells and lilies and onions could be up to such immorality? How could so licentious a method be taught to the young without offense?”

In response, Linnaeus named a foul-smelling weed after one of his more vocal critics. He called it Siegesbeckia.

Source of photo: Cyber Herb Medicine Simulation Room

Adanson (1727-1806)
Familles des Plantes
de Jussieu (1748-1836)
Genera Plantarum

Lamarck (1744-1829)
Flora Francoise
Darwin (1809-1882)
Origin of Species 1859

VI. Evolutionary Taxonomy
A. Darwin

B. Engler (1844-1930): Die Natürlichen Pflanzenfamilien

Bessey (1845-1915)
“Bessey’s Dicta”
Evolutionary Taxonomists: Armen Takhtajan & Arthur Cronquist
NYBG ca. 1965
Cladistics: Willi Hennig (German; 1913-1976)

Grundzüge einer Theorie der Phylogenetischen Systematik (Hennig, 1950).

Phylogenetic Systematics (Hennig, 1966)

Cladistics: Distinction between Phylogeny and Tokogeny.
How to infer a phylogeny
Or
How to build a cladogram:
Synapomorphies

Evidences for relationships? Shared derived character states.

http://research.amnh.org/~siddall/methods/day2.html
How to infer a phylogeny
Or
How to build a cladogram:
Synapomorphies

Notochord; hollow dorsal nerve chord
vertebrae; jaws
How to infer a phylogeny
Or
How to build a cladogram:
Synapomorphies

- vertebrae; jaws
- lungs, 4-legs
- claws or nails
- fur; mammary glands
- notochord; hollow dorsal nerve chord

17
How to infer a phylogeny
Or
How to build a cladogram:
Synapomorphies

- vertebrae
- jaws
- claws or nails
- fur; mammary glands
- loss of tail
- hollow dorsal nerve chord
- lungs, 4 legs

How to evaluate a cladogram? Parsimony (number of steps)

- 10 “steps”
How to evaluate an alternative cladogram? Parsimony (number of steps)
How to evaluate an alternative cladogram? Parsimony (number of steps)
How to evaluate an alternative cladogram? Parsimony (number of steps)

- 17 "steps"
How to evaluate an alternative cladogram? Parsimony (number of steps)

18 "steps"

Vertebrates; jaws

Notochord; hollow dorsal nerve chord

Lungs, 4-legs

Claws or nails

Fur; mammary glands

How to evaluate an alternative cladogram? Parsimony (number of steps)