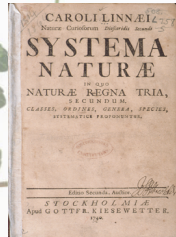


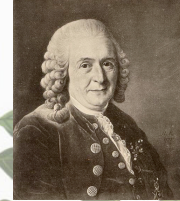
300 Years of Linnaeus!

(or the f'ed state of taxonomy)



Kevin Zelnio, 2007

Species: *Homo sapiens*



Type specimen: Carl von Linné

Type locality: Uppsala, Sweden

Description: Bipedal primates in the mammalian family Hominidae with highly developed brain capable of abstract reasoning, language and introspection

Etymology: "Wise Man"

Young Linné

- Schooled in Växjö 1724
- Poor student

"his tutors like the sapient instructors of Newton at Cambridge, gave him up as a hopeless dunce. They advised he should be put apprentice to a shoemaker, tailor or some other handicraft trade"

-Ree's Cyclopaedia 1819

- Apprenticed in medicine with Dr. Rothman 1726

Doctor Linné

- Dr. Rothman tutored Linné in medicine and botany for a year
- Entered Lund University 1727
 - Unhappy with Lund, moved to Uppsala 1728
- Received 2 Royal Medical Scholarships
- "Adopted" by Olof Celsius and received fees for lecturing



Doctor Linné

- Olof Rudbeck impressed, hired Linnaeus as botanist and to tutor his 3 sons in botany, and 4th son in medicine
- Received Royal Stipend in 1730
- Patronage ended 1731, no money



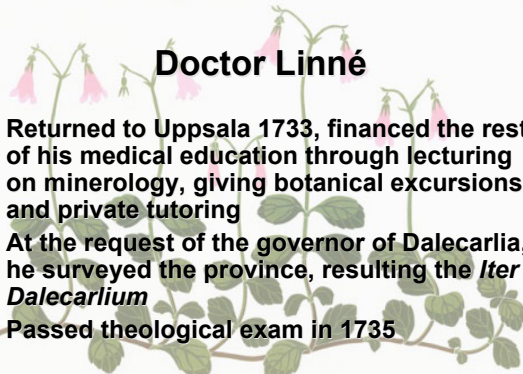
Doctor Linné



- Convinced Royal Society of Science to give him money to document Lapland flora
- Covered 3800 miles, judged by one historian of Swedish botany

"the most productive exploratory expedition ever undertaken in Sweden" -R.E. Fries 1950

-
- The map shows the northern part of the Caspian Sea with the following labels:
- Cities and Towns:** Baku, Ganja, Nakhichevan, Khankendi, Yevlakh, Agdash, Zangazur, Karabakh, Absheron, and others.
 - Islands and Peninsulas:** Absheron, Karabakh, Zangazur, and others.
 - Geographical Features:** The Caspian Sea, the Caucasus Mountains, and the Araks River.
 - Scale:** A scale bar at the bottom indicates distances up to 100 km.

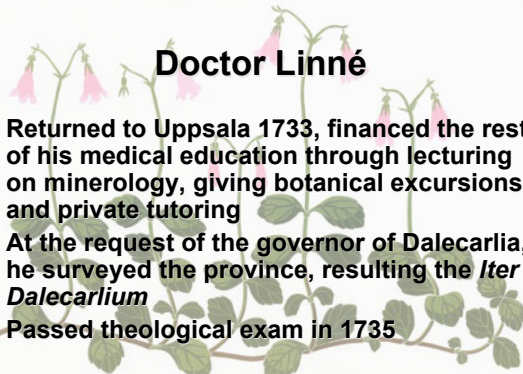


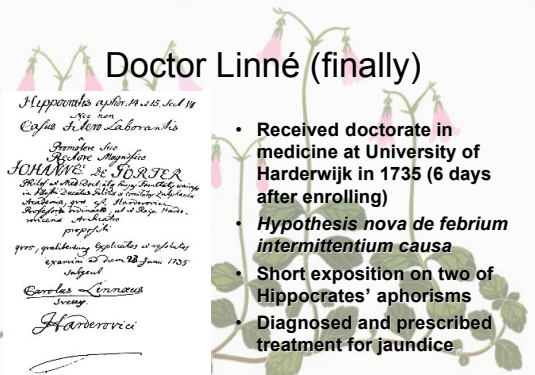
Doctor Linné

Returned to Uppsala 1733, financed the rest of his medical education through lecturing on mineralogy, giving botanical excursions and private tutoring

At the request of the governor of Dalecarlia, he surveyed the province, resulting the *Iter Dalecarlicum*

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Doctor Linné (finally)

Hippocratis aphor. 1719, 1721, 1723, 1724
vis non
Capit. de Morb. laborantibus

Temperies duo
Regimen Aegroticis
JOHANNES LINNÆUS
Philos. et Med. Scien. et Natur. Hist. Instit. in
Recht. Sacrae Med. et Natur. Hist. Acad. Scien. Upsal.
Supplem. Invenit. et Instit. de Reg. Natur.
ratione medicis
prolegomena
 1729, publishing Aphorisms in aphorisms
 examining 27 June 18 June 1725

Corpus Aeginetia
Ungar.
Harverwici

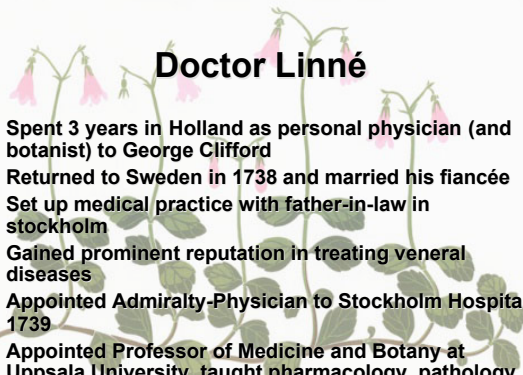
- Received doctorate in medicine at University of Harderwijk in 1735 (6 days after enrolling)
- *Hypothesis nova de febrium intermittentium causa*
- Short exposition on two of Hippocrates' aphorisms
- Diagnosed and prescribed treatment for jaundice

-
- # Doctor Linné (finally)
- Hippocratis aphor.* M., ed. Oct 17
vix non
Copio de laborantibus
 - Synonymia duo*
Aphoris Aphorismi
JOHANNES LINNÆUS
Petrus et Anna Rudolphæ de Lundensium regni vice-regis medicorum salutari consilio confectum
Lundæ apud J. Hævericij librarii
MDCCLXXIII
 - pamphlet*
privatim publicandis typographis ex officina
examini d. Junii 18 June 1753
 - Carolus Linnaeus*
suecicus
Harvardici
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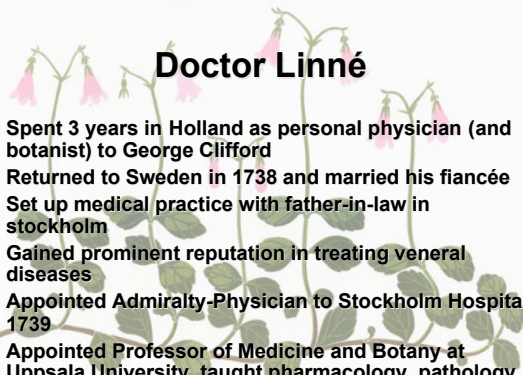
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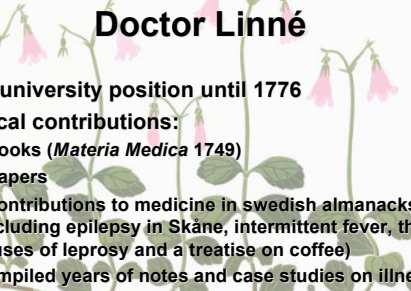
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Doctor Linné

- Spent 3 years in Holland as personal physician (and botanist) to George Clifford
- Returned to Sweden in 1738 and married his fiancée
- Set up medical practice with father-in-law in Stockholm
- Gained prominent reputation in treating venereal diseases
- Appointed Admiralty-Physician to Stockholm Hospital 1739
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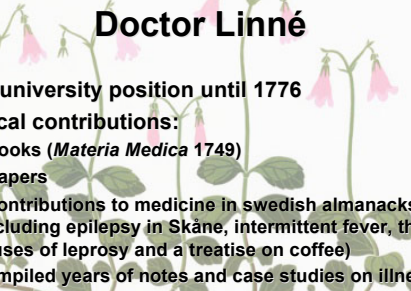


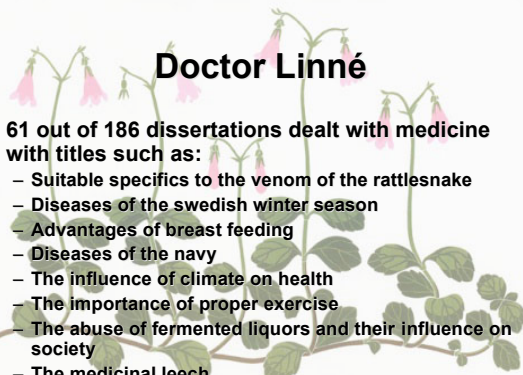
Doctor Linné

Held university position until 1776

Medical contributions:

- 3 books (*Materia Medica* 1749)
- 3 papers
- 5 contributions to medicine in swedish almanacks (including epilepsy in Skåne, intermittent fever, the causes of leprosy and a treatise on coffee)
- Compiled years of notes and case studies on illnesses
- Published on the poisonous nature of smoking

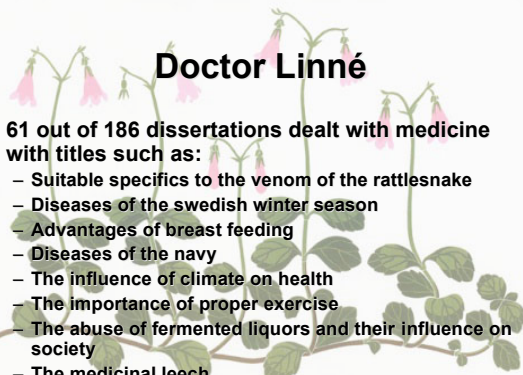
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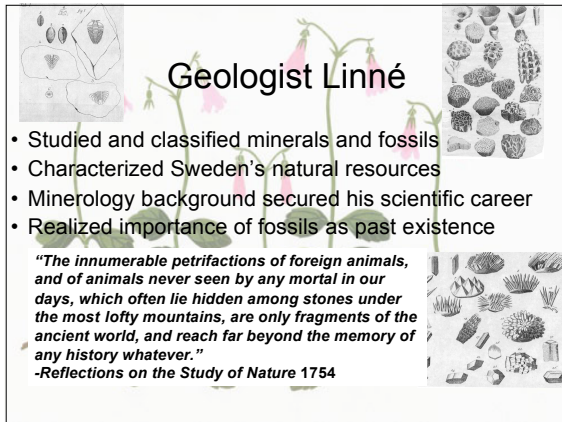


Doctor Linné

61 out of 186 dissertations dealt with medicine with titles such as:

- Suitable specifics to the venom of the rattlesnake
- Diseases of the swedish winter season
- Advantages of breast feeding
- Diseases of the navy
- The influence of climate on health
- The importance of proper exercise
- The abuse of fermented liquors and their influence on society
- The medicinal leech

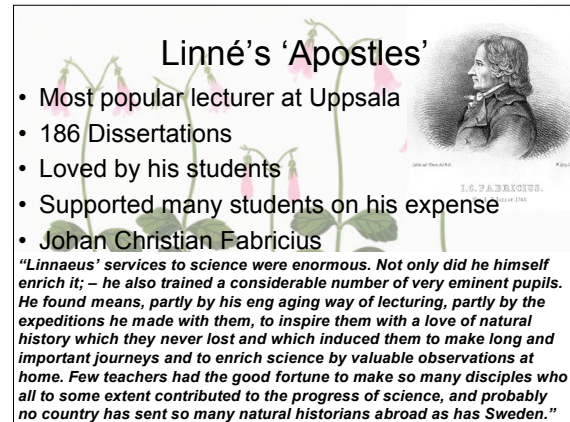
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Geologist Linné

- Studied and classified minerals and fossils
- Characterized Sweden's natural resources
- Minerology background secured his scientific career
- Realized importance of fossils as past existence

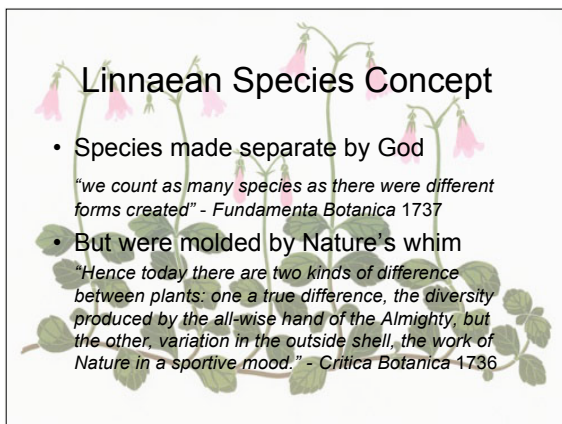
"The innumerable petrifications of foreign animals, and of animals never seen by any mortal in our days, which often lie hidden among stones under the most lofty mountains, are only fragments of the ancient world, and reach far beyond the memory of any history whatever."
 -Reflections on the Study of Nature 1754



Linné's 'Apostles'

- Most popular lecturer at Uppsala
- 186 Dissertations
- Loved by his students
- Supported many students on his expense
- Johan Christian Fabricius

"Linnaeus' services to science were enormous. Not only did he himself enrich it; - he also trained a considerable number of very eminent pupils. He found means, partly by his engaging way of lecturing, partly by the expeditions he made with them, to inspire them with a love of natural history which they never lost and which induced them to make long and important journeys and to enrich science by valuable observations at home. Few teachers had the good fortune to make so many disciples who all to some extent contributed to the progress of science, and probably no country has sent so many natural historians abroad as has Sweden."



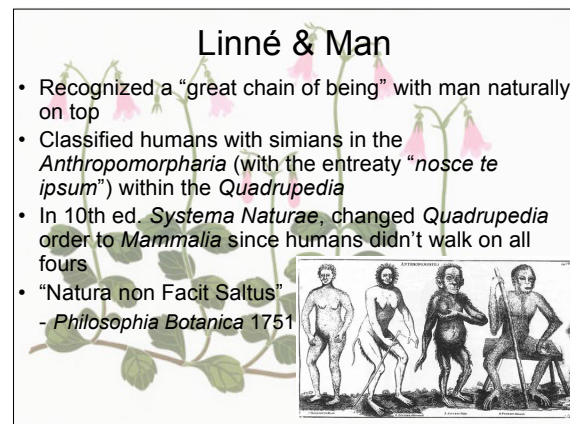
Linnaean Species Concept

- Species made separate by God

"we count as many species as there were different forms created" - Fundamenta Botanica 1737

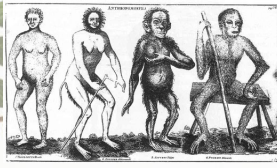
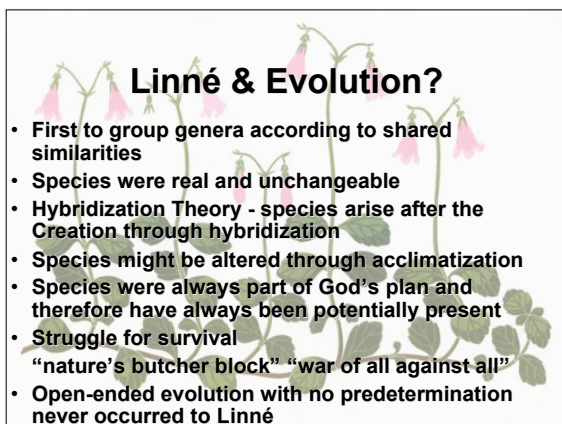
- But were molded by Nature's whim

"Hence today there are two kinds of difference between plants: one a true difference, the diversity produced by the all-wise hand of the Almighty, but the other, variation in the outside shell, the work of Nature in a sportive mood." - Critica Botanica 1736



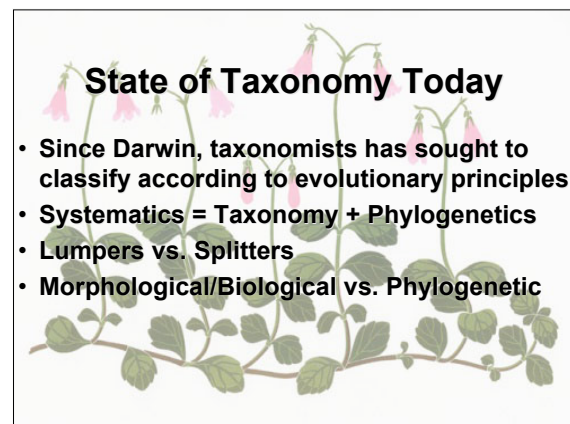
Linné & Man

- Recognized a "great chain of being" with man naturally on top
- Classified humans with simians in the *Anthropomorpha* (with the entreaty "*nosce te ipsum*") within the *Quadrupedia*
- In 10th ed. *Systema Naturae*, changed *Quadrupedia* order to *Mammalia* since humans didn't walk on all fours
- "Natura non Facit Saltus"
- *Philosophia Botanica* 1751

Linné & Evolution?

- First to group genera according to shared similarities
- Species were real and unchangeable
- Hybridization Theory - species arise after the Creation through hybridization
- Species might be altered through acclimatization
- Species were always part of God's plan and therefore have always been potentially present
- Struggle for survival
- "nature's butcher block" "war of all against all"
- Open-ended evolution with no predetermination never occurred to Linné



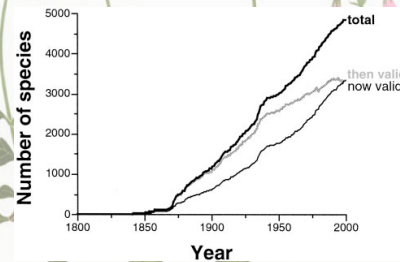
State of Taxonomy Today

- Since Darwin, taxonomists has sought to classify according to evolutionary principles
- Systematics = Taxonomy + Phylogenetics
- Lumpers vs. Splitters
- Morphological/Biological vs. Phylogenetic

Taxonomic Inflation with Phylogenetic Species Concept

“...surveys based on a phylogenetic species concept showing more species (48%) and an associated decrease in population size and range”
- Agapow *et al.* 2004 *Quart Rev Biol*

Validity decreasing over last 100 years



Data from Alroy 2002 *PNAS*

Keep taxonomy free of science!

- Taxonomic rules governed International Codes
 - Publication
 - Priority
 - Typification
 - Maintenance of Scientific Neutrality
- Names are meant to convey a species and all the biology it carries with it
- Proper names mean the difference between life or death in medicine, setting appropriate conservation priorities, etc.

Happy Birthday Linné!

