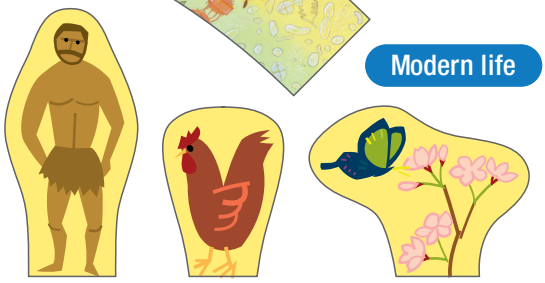
1

Modern life



2

common ancestor of mammals
angiosperms
gymnosperms
pteridophytes
bryophytes
chordates
sponges (metazoa)
chytrids (primitive fungi)
common ancestor of metazoa and fungi
common ancestor of plants
common ancestor of protists
eukaryotes
prokaryotes

1 hundred million years ago 5 10 20 30 38
present day
beginning of life

Estimated age of the first appearance by DNA study

archaea protists fungi
eubacteria plants animals

3

mammals (China)
insects (England)
land plants (Argentina)
seaweeds (China)
sponges (Namibia)
multicellular algae (USA)
colonial organisms (Gabon)
traces of eukaryotes and algae (Canada)
microfossils (Canada)
biogenic substance (Greenland)

1 hundred million years ago 5 10 20 30 38
present day
beginning of life

Time of the oldest fossils found

archaea protists fungi
eubacteria plants animals

4

side | **History of evolution of life viewed from DNA and fossils**

Comparing DNA sequences between species tells changes in DNA accumulated after the two species were divided. These changes estimate the age when these species arose. This method calculates the age older than when they really appeared, because it shows the time when they were first divided. Fossils tell us the shape and the living age of ancient lives. Combination DNA and fossils estimates the age of old life more accurate.

references : *Bioinformatics* vol.22 2971-2972(2006)
TIMETREE http://www.timetree.org

back | **Genome size and body size**

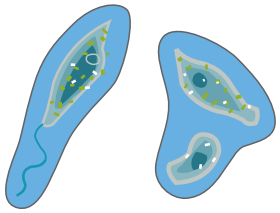
Genomes contain many genes, however, genome size does not depend on the number of genes but the size of regions without genes. The relationships between the organisms and their genome size remain an open question. The animals which have the largest genomes are lungfishes, familiar at the BRH, and the organisms which have largest bodies are surprisingly fungi. The fungus covering the Oregon Mountain was found an individual organism by its DNA analysis.

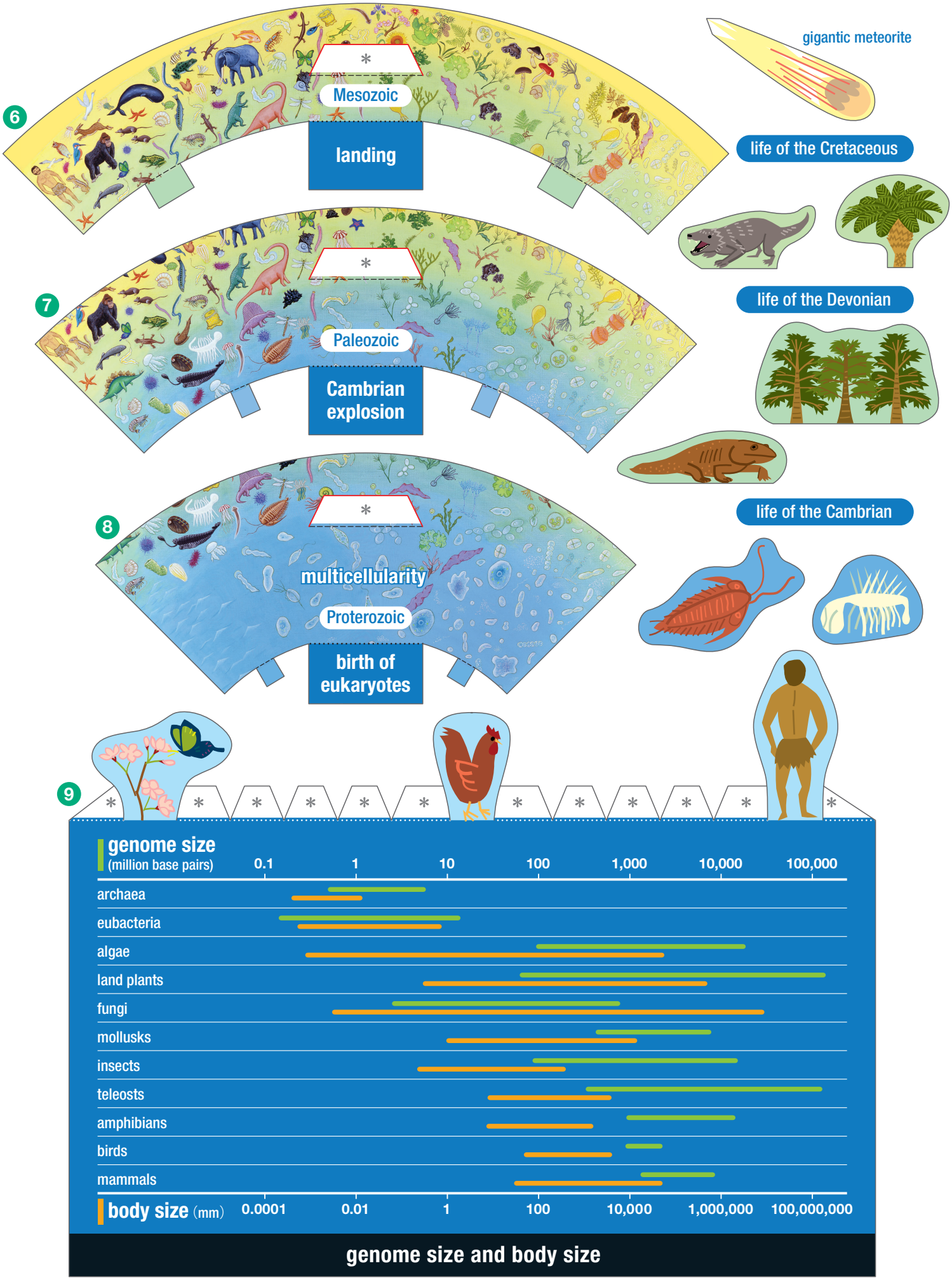
references : http://en.wikipedia.org/wiki/Largest_organisms

5

beginning of life

eukaryotes





genome size and body size