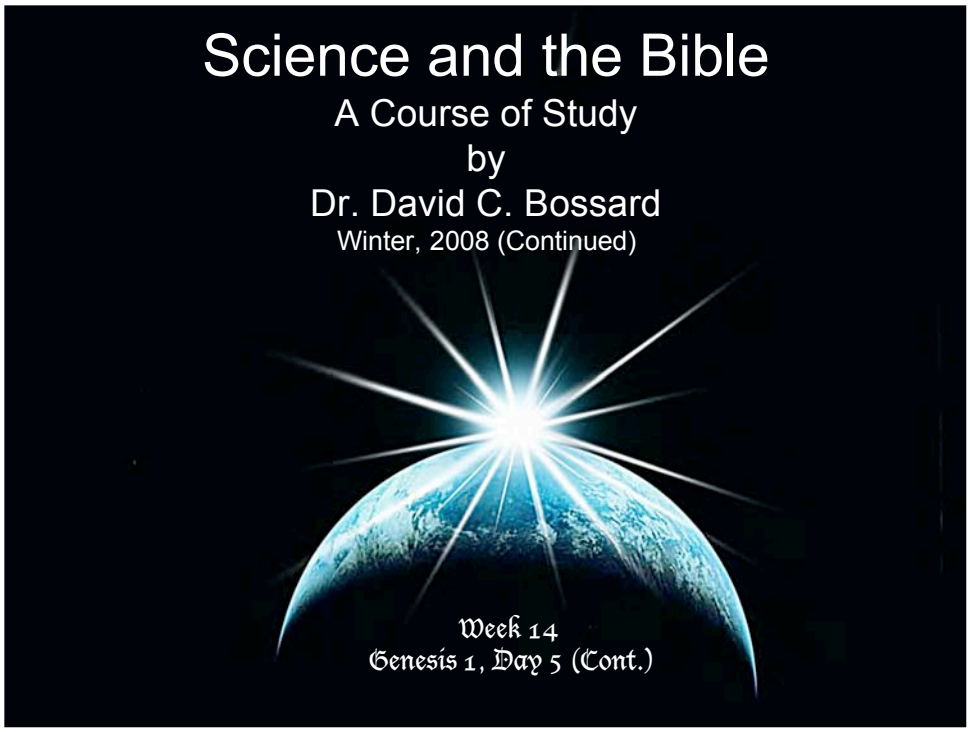
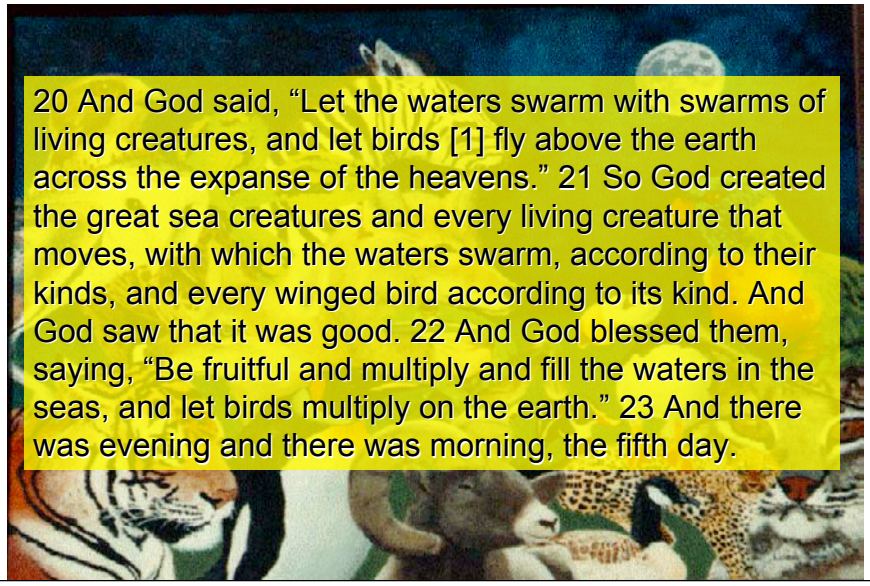


This is week 14 in a course of study in Science and the Bible. We will continue our discussion of the creation of animal life, which began in Day 5.

In the past weeks we emphasized the vast complexity of the first life -- complex because to even think of life, you must be able to do very complex things.

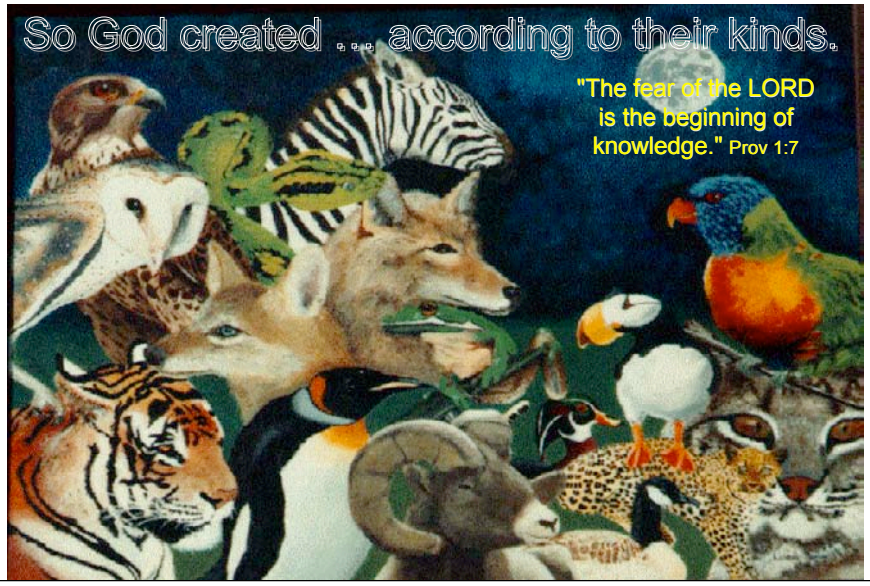
We mentioned the "central dogma" which every form of life follows -- from the simplest to most complex -- and which determines how the genetic code stored in the DNA, controls the production of proteins and other life molecules. This is a vastly complex process and requires several hundred thousand codes In the DNA to build the basic parts, as well as complex molecules, to carry it out -- such as the

Genesis 1:20-23, Day Five:
Creation of Sea and Air Animals



20 And God said, “Let the waters swarm with swarms of living creatures, and let birds [1] fly above the earth across the expanse of the heavens.” 21 So God created the great sea creatures and every living creature that moves, with which the waters swarm, according to their kinds, and every winged bird according to its kind. And God saw that it was good. 22 And God blessed them, saying, “Be fruitful and multiply and fill the waters in the seas, and let birds multiply on the earth.” 23 And there was evening and there was morning, the fifth day.

Genesis 1:20-23, Day Five:
Creation of Sea and Air Animals



Genesis 1:20-23, Day Five:
Creation of the First Animals

The variety of plant and animal body plans. [Show phylum charts]

- Major Plant types
- Major Animal types

I'd like to just look at some of the body types for plants and animals -- not exhaustive, but just to give an idea of what's involved.

Genesis 1:20-23, Day Five:
Creation of the First Animals

The variety of plant and animal body plans. [Show phylum charts]

- Major Plant types
  - Plants without seeds or flowers -- ferns & horsetails (very common in the coal age)
  - Plants with flowers - grasses, cereals, shrubs, trees.

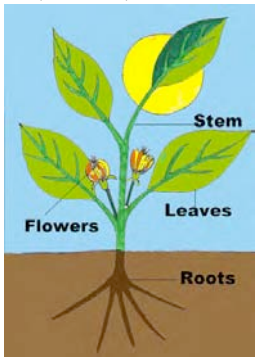
No Veins or Roots

Veins (Vascula) "wood" (Lignin)

Seeds

Informal group	Division name	Common name	No. of living species
Green algae	Chlorophyta	green algae (chlorophytes)	3,800 [7]
	Charophyta	green algae (desmids & charophytes)	4,000 - 6,000 [8]
Bryophytes	Marchantiophyta	liverworts	6,000 - 8,000 [9]
	Anthocerotophyta	hornworts	100 - 200 [10]
	Bryophyta	mosses	10,000 [11]
Pteridophytes	Lycopodiophyta	club mosses (Giant Coal fossils (scale tree))	1,200 [3]
	Pteridophyta	ferns, whisk ferns & horsetails	11,000 [3]
Seed plants	Cycadophyta	cycads	160 [12]
	Ginkgophyta	ginkgo	1 [13]
	Pinophyta	conifers	630 [3]
	Gnetophyta	gnetophytes	70 [3]
	Magnoliophyta	flowering plants	258,650 [14]

Diversity of living plant divisions



Flowering Plants

Here are the major plant types:

Bryophytes have no veins so they depend on (osmotic) water pressure to maintain shape.

They also lack woody matter which is needed for rigidity.

In advanced plants, there are special mechanisms to control the supply and conservation of water.

The golden age of Lycopods
Pennsylvanian Coal Era

Pennsylvanian mire forest

Fossil scale tree
Pennsylvanian mire forest
Elrick Mine, Illinois (2007)

Genesis 1:20-23, Day Five:
Creation of the First Animals

The variety of plant and animal body plans. [Show phylum charts]

- Major Animal types

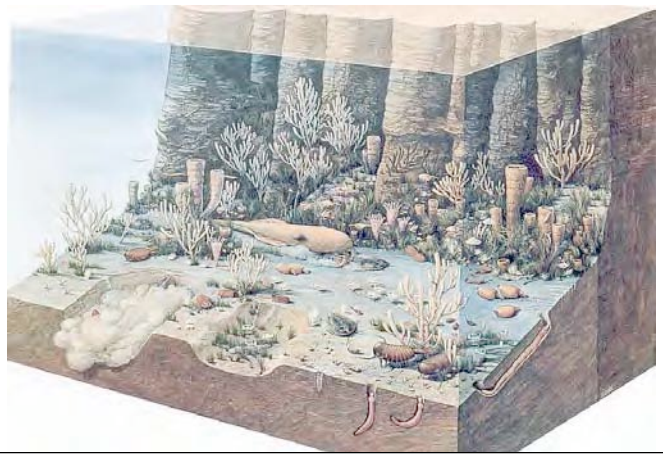
Types of Animals

Phylum	Examples	Milestone
Porifera	sponges	multicellularity
Cnidaria	jellyfish, hydra, coral	Tissues, stingers
Platyhelminthes	flatworms	bilateral symmetry
Nematoda	roundworms	pseudocoelom
Mollusca	clams, squids, snails	coelom
Annalida	earthworms, leeches	segmentation
Arthropoda	insects, spiders, crustaceans	jointed appendages
Echinodermata	starfish	deuterostomes
Chordata	vertebrates	notochord

-

Genesis 1:20-23, Day Five:
Cambrian Explosion

All body plans (phyla) appear suddenly at (almost) the same time in the fossil record.



"Almost every metazoan phylum with hard parts, and many that lack hard parts, made its first appearance in the Cambrian.

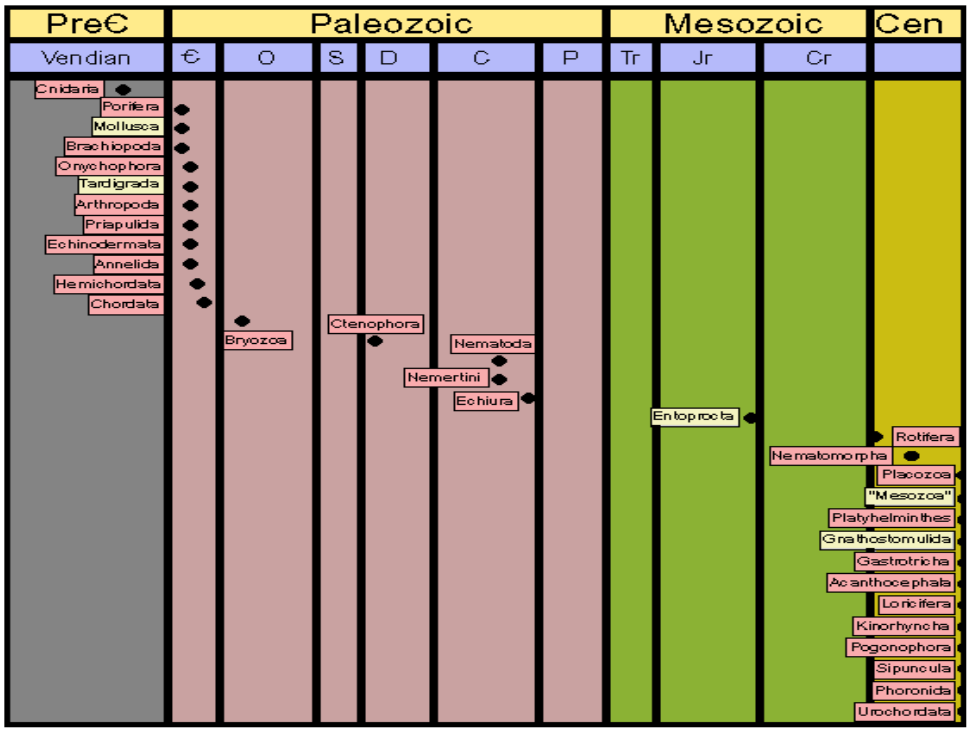
The only modern phylum with an adequate fossil record to appear after the Cambrian was the phylum Bryozoa, which is not

known before the early Ordovician."

http://www.ucmp.berkeley.edu/cambrian/camblife.html

"The Cambrian explosion or Cambrian radiation describes the seemingly rapid appearance of most major groups

of complex animals in the fossil record" Wikipedia



First appearances in the fossil record. These dates are always subject to change as new fossil discoveries occur.

The Cambrian era (in fact most of the eras) was named by English geologists. The Cambrian was the rock layer that was the

Highest then known to contain animal fossils.

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Genesis 1:20-23, Day Five:
Cambrian Explosion

Example of segmented body plan
Trilobite

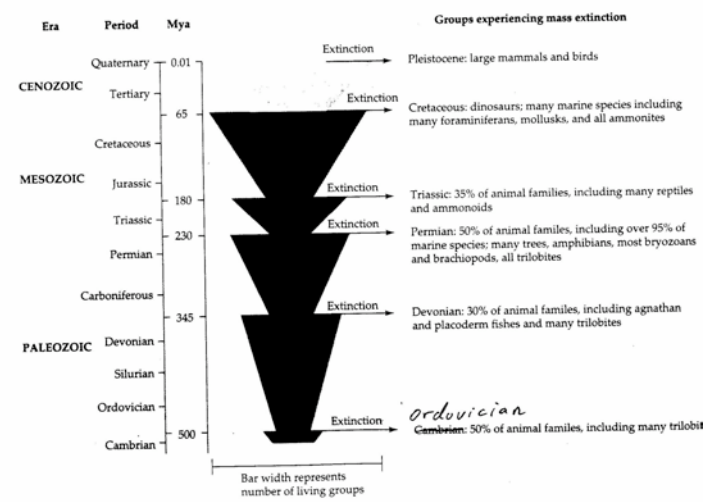
Topics for discussion

- More on body plans
  - the 39 phyla
  - all suddenly appear in the fossil record "Cambrian explosion"
  - body segments
  - experiments on hox genes -- growing legs, eyes and antennae
- Yes - there is a progression of complexity,
  but ALL life is exceedingly complex!!!

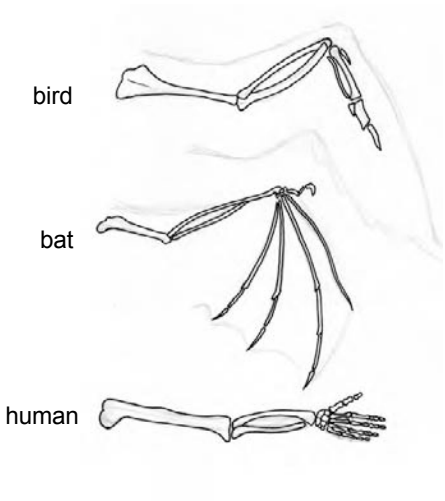
* Talk about extinctions -- bring in Psalm 104:

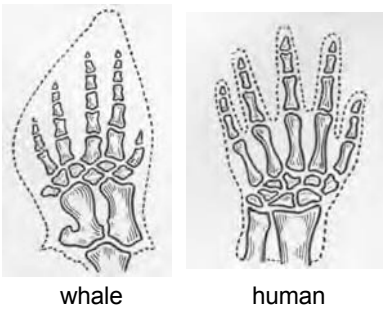
Topics for discussion

•Talk about extinctions -- bring in Psalm 104:27-30
I don't necessarily believe that these verses have the Extinctions in mind, but it is an interesting thought!



Genesis 1:20-23, Day Five:
Creation of Sea and Air Animals
The leg, arm and wing genes.





The "evo-devo" branch of evolution. Human arm, whale flipper, bird wing.

Legs, arms, hands and wings all come from the same package of genetic material.

The hox genes control how this package is expressed in the different species.

A person who believes in Creation, would argue that God used the same basic genetic package over and over.

This similarity does not necessarily imply descent from a common ancestor.

Nor does belief in a Creator necessarily imply that God did not use natural development when appropriate.

How God used these common packages is something we can investigate with perfect freedom.

A natural evolutionist argues that the similarity of very complex structures and common genetic material

must imply a common ancestor. If he doesn't accept an intelligent Creator, he has no other option. He does not