

Mankind and Fossils

David L. Dillon, M.Sc.



Introduction

- In this assignment you will be required to learn how fossils are categorized.
- You will also be required to identify fossils to the level of phylum and in some cases to the level of class.

Taxonomy – naming and categorizing

- The scientific method has attempted to explain the universe through the application of logic.
- It relies on a wealth of knowledge gathered by research and organized systematically.
- The primary division is into "kingdoms". For our purposes, we'll simplify this into



Vegetables,



Animals



and Minerals.

Taxonomy continued

- Even with this kind of simplification, things eventually become more complex. Within each kingdom are groups, each of which is called a "phylum".
- The following are the principle phyla of our version of the animal kingdom:
- Protozoa – single celled animals
e.g. amoeba
- Porifera – sponges
- Coelenterata - hydrozoans, sea anemones, corals, jellyfish



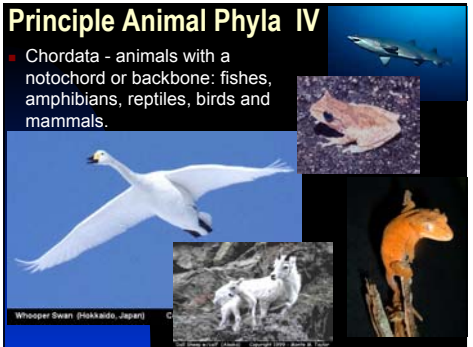
Principle Animal Phyla continued

- Bryozoans - moss animals
- Brachiopoda - lamp shells
- Mollusca - snails, clams, squids



Principle Animal Phyla IV

- Chordata - animals with a notochord or backbone: fishes, amphibians, reptiles, birds and mammals.



Principle Animal Phyla III

- Annelida - segmented worms
- Arthropoda - crustaceans, spiders, insects, centipedes, trilobites
- Echinodermata - sea lilies, starfish, sea urchins



Classes

- Within each phylum, the next degree of sorting is into "classes".
- This will only be important when we deal with three particular phyla: mollusca, arthropoda and chordata.

Mollusca

- There are three classes of mollusks: gastropoda – the limpets, snails, and slugs;
- pelecypoda – the clams including oysters;

and cephalopoda – squids, cuttlefish, octopi, and nautilus.



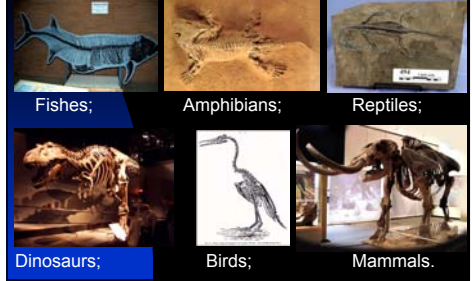
Arthropoda

- Arthropods have jointed limbs within a rigid exoskeleton. In order to keep things simple, we will acknowledge only a few of the arthropod classes:
- Insects – adults are air breathing and have six legs;
- Crustaceans include lobsters, crabs and barnacles;
- Arachnids are spiders
- Trilobites are an extinct class that consists of one axial lobe and two pleural lobes.



Chordata

- For our purposes, chordate classes are:



Your Assignment

- Use the hand outs to determine the identity of the fossils in question to the level of phylum, or class (as required in the question).