3: *It's a What-cha-ma-callit*

The science of naming organisms is called **taxonomy**. Every organism is described based on its features and placed in its proper category with other similar organisms. The classification starts with broad groups and becomes more and more specific right down to particular organisms, the names of which are based on the Latin language.

The broadest category is called a **kingdom**. There is a lot of controversy surrounding the number of kingdoms that should be recognized and even about which kingdom certain large groups of organisms belong in. Evolutionists attempt to fit organisms into a pattern of changes from a presumed common ancestor. More conservative scientists simply group them based on what is known about them. For our studies, we will refer to five kingdoms by their English names: Eubacteria, Archaea, Plants, Fungi and Animals.

Kingdoms are further subdivided into **phyla** (plural for phylum). Phyla are divided into **classes**, classes into **orders**, orders into **families** and families into **genera** (plural for genus). The group of organisms that are considered taxonomically identical to other organisms in their group is the **species**. The book of Genesis says that animals reproduce after their own kind. You could refer to a species of animals as one "kind" of animal. This Biblical definition works as well as any other that scientists have been able to come up with.

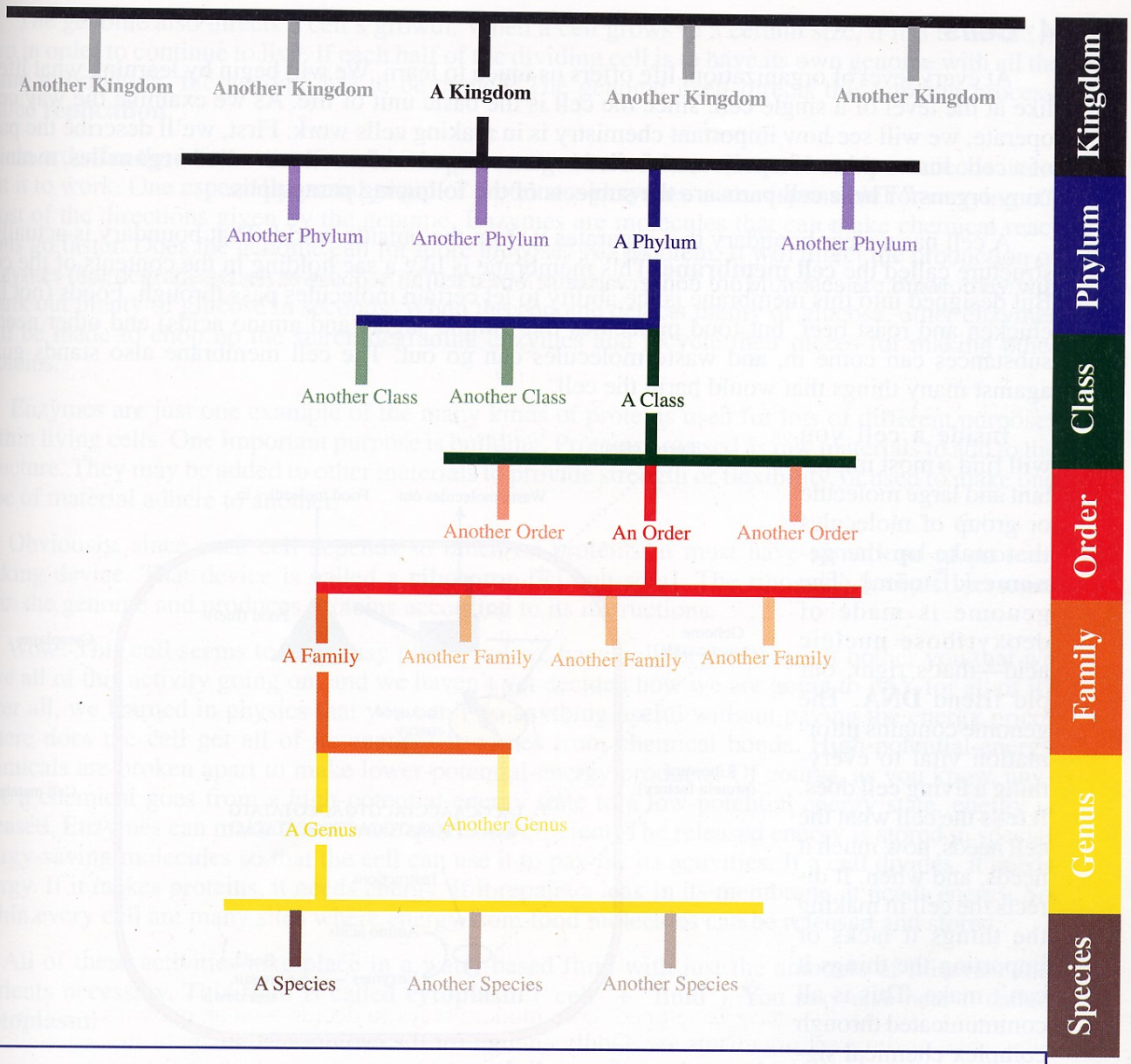
As an example of a classification, take the organism *Homo sapiens*. This organism is in the Kingdom Animalia (animal kingdom), the phylum Chordata, the class Mammalia, the order Primates, the family Hominidae, the genus *Homo*; it represents the species *sapiens*. Notice how the genus and species names are always italicized or underlined. Whether you realize it or not, you have just been classified. *Homo sapiens* is the **binomial** ("two" + "name") designation for humans. This two-name system of classification was begun in the mid 1700's by a Swedish man named Carolus Linnaeus. In addition to being an undisputed top-notch botanist, this man was an early champion of the idea of classifying animals according to a scheme laid down by God at the time of creation.

There is a series of methods used by taxonomists (people who name organisms for a living) for this purpose. The "rules" have accumulated over a long period of time into the complex science of **systematics**. Systematics was developed mostly around the variations in body parts, like the differences in lengths of forearm bones, or the number of scales from snout to tail, or the breadth and thickness of skull bones. Nearly every known organism has been measured in all possible ways and compared with every other organism thought to resemble it. Taxonomists rank these features in an order of importance and use them to decide which animals are "most alike" in an evolutionary sense.

Lately, biochemists have developed more modern ways to decide—on an evolutionary basis—how alike or different organisms are. Oddly enough for the evolutionist, many of the old methods and the new methods don't match up very well. It is unclear to them which of the techniques is in error, or whether the fossil record is right and the evolutionary model just doesn't work in putting the whole picture together. Instead of missing links, we have missing chains with only a few supposed links to suggest that there might at one time have been a chain.

Exercises:

1. Can two animals in the same genus also be in the same species?
2. Can two animals in different orders possibly be in the same phylum?
3. Can two plants in different classes be in the same family?



Taxonomic trees that look like this one will be used throughout the remainder of the Blue Section to help you keep track of where we are in the taxonomic system of living organisms. The first level of the table represents the kingdoms; the second level represents the phyla. We will try to show you examples of the most important phyla of living organisms and, in many cases, show you examples from the different classes of animals in a phylum. Once we get to the vertebrate animals, we will go even further down the tree. To see the order in any collection of objects, it helps to sort those objects into groups based on their similarities and differences. The taxonomic tree is a method of classifying organisms into groups based on their similarities and differences. As the groups get smaller, their organisms get more and more alike. At the species level they reproduce to make organisms that are still in the same species. You might say that they reproduce "after their own kind."