

Chapter 6-5: The Classification Scheme

The phylum chordata contains mammals (mammalia), birds (aves), reptiles (reptilia), amphibians (amphibia), and some classes of fishes (agnatha, placodermi, chondrichthyes, and osteichthyes). Humans belong to the class **Mammalia (C)**, and this class extends outward. Mammals nurse their young with mammary glands and generally have hair on their body. The **other classes (C₁)** should be also colored.

Within the class mammalia are several orders. For example, the order we belong to is the **order of primates (D)**, which includes monkeys, apes, and humans. They have large brains, short snouts, and well-developed binocular vision, together with complex social behavior. The **other orders (D₁)** do not share these characteristics.

We have now progressed from the animal kingdom to the primate order. Each group is successively more specific than the previous one. We now come to the human species. Continue your reading below and color the plate as you proceed.

Within the primate order, there are several families. One of these is the family **Hominida (E)**. This family contains the members of the human family. These animals have (and had) larger brains than monkeys and other **families (E₁)** of the order primata.

The family Hominida contains at least two genera of human beings and their ancestors. One is the genus **Homo (F)**. This is the group to which modern species belong. The other genus is *Australopithecus*, an early hominid that shares many characteristics with modern humans. The plate on human evolution discusses this genus in more detail. **Other genera (F₁)** may exist in addition to *Australopithecus*, but they have not yet been identified.

Within the genus *Homo* is the species **Homo sapiens (G)**. This is the modern human being. *Homo habilis* and *Homo erectus* are **other species (G₁)** in this genus. The plate on human evolution discusses these species in more depth. Now we have completed the classification of the human from the broadcast category, the kingdom, to the most detailed category, the species.

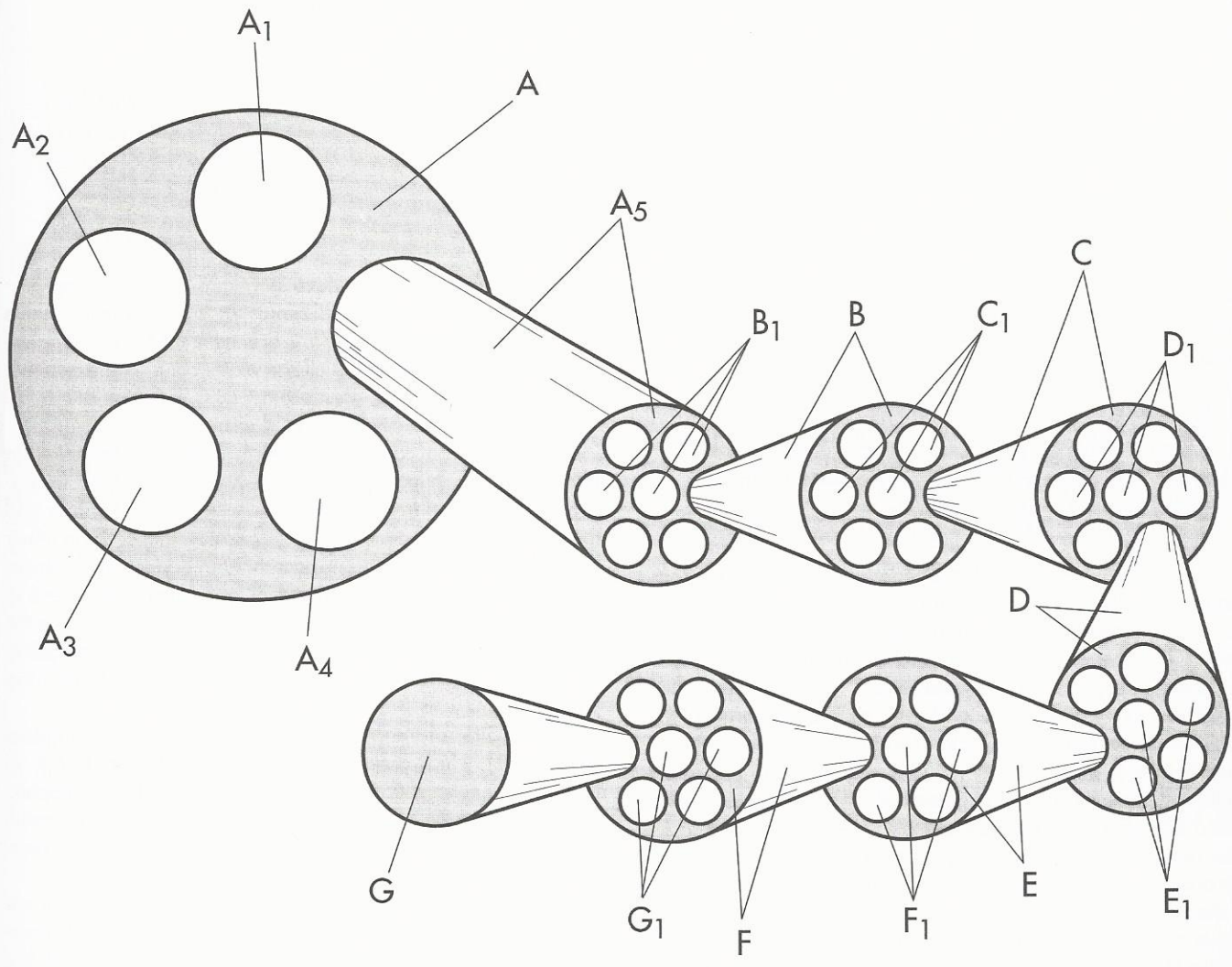
Scientists are aware of the existence of millions of different kinds of organisms. Because of this huge number, scientists need an elaborate classification scheme to organize them. The science of classifying and naming organisms is known as taxonomy. Linnaeus, who was perhaps the first taxonomist, was a Swedish botanist who lived in the mid-1700s. Over a period of many years, he developed the scheme of classification that is still used today. Binomial names are assigned to species; the names consist of the genus (one specific category of living things) to which the organism belongs (e.g., *Homo*) and an adjective describing the organism, which is called a specific epithet (e.g., *sapiens*). Thus, our binomial name is *Homo sapiens*. We will study the classification system in this plate.

This plate shows the categories used to classify organisms. The categories are arranged in a hierarchy from the broadest group, the kingdom, to the most specific group, the species.

Beginning in the 1950s, biologists recognized that all living things fall into five broad categories called **kingdoms (A)**. These kingdoms are discussed in succeeding plates. They include the **Monera (A₁)**, **Protista (A₂)**, **Fungi (A₃)**, **Plantae (A₄)**, and **Animalia (A₅)**. Human beings fall into the Kingdom Animalia, and we will begin our study with animals.

We will begin our study of classification by looking at human beings, which are categorized in the Kingdom Animalia. Note that this kingdom extends outward in the plate.

The Kingdom Animalia is subdivided into a number of categories called phyla. Within these phyla are animals that lack backbones, including sponges, hydras, flatworms, segmented worms, arthropods, and starfish. Humans are classified in the **phylum Chordata (B)**, and this phylum projects outward in the plate. Some of the animals in the phylum chordata are vertebrates, and all of the members of this phylum have a dorsal nerve chord, a notochord, and a backbone. The **other phyla (B₁)** lack these properties.



The Classification Scheme

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| ○ KingdomsA | ○ Phylum CordataB | ○ Family HominidiaE |
| ○ MoneraA ₁ | ○ Other Phyla.....B ₁ | ○ Other FamiliesE ₁ |
| ○ ProtistaA ₂ | ○ Class MammaliaC | ○ Genus <i>Homo</i>F |
| ○ Fungi.....A ₃ | ○ Other Classes.....C ₁ | ○ Other GeneraF ₁ |
| ○ Plantae.....A ₄ | ○ Order Primata.....D | ○ Species <i>Homo Sapiens</i> ..G |
| ○ AnimaliaA ₅ | ○ Other OrdersD ₁ | ○ Other Species.....G ₁ |