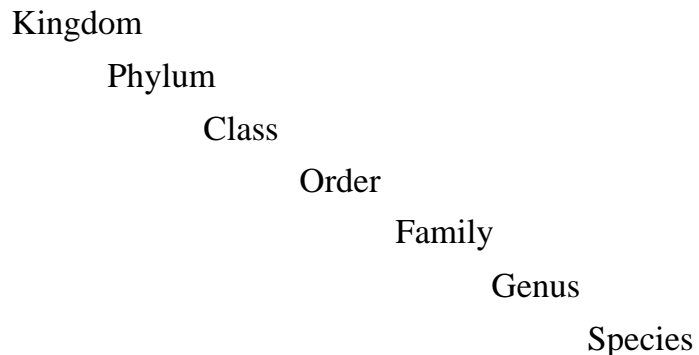


LINNAEAN HIERARCHY

THE DISTINCTION between a hierarchy and a key, and consideration of the relationships between the two, are essential to understanding either one of them. Nevertheless, in FISH/BIOL 311 we will be concerned almost exclusively with classifications in the form of hierarchies (i.e., inter-nested sets of taxonomic categories and names; see “Rules on Names and Naming”). Throughout the course, we shall be using a single form of hierarchy that has been adopted by general agreement for most all zoological classifications and which is the basis for most all zoological nomenclature. This hierarchy was developed mainly in the seventeenth and eighteenth centuries and reached nearly definitive form (at least for zoologists) in the tenth edition of the *Systema Naturae* published by Carolus Linnaeus in 1758, for which reason it is called the Linnaean hierarchy. Its basic feature is a sequence of seven levels (Linnaeus used only five of these seven. Phylum and family have been added since from other sources. Linnaeus also used another level, which he called empire, at the top, for the whole world of phenomena):



The sequence from top to bottom and the customary indentations indicate decreasing scope or inclusiveness of the various levels. The number of kinds of organisms to be classified has now become so enormous that seven levels are rarely enough in practice. The deficiency has been made up, for the most part, by adding additional levels designated as *super-* lying above the various basic levels and as, successively, *sub-* and *infra-* lying below them. Numerous proposals to add to the seven basic levels have also been made, but these have

not been standardized and are not in general use. It is unnecessary to list all of them, and the use by any particular taxonomist can be picked up readily enough in his or her work. Those in widest use are probably *cohort*, placed between class and order, and *tribe*, usually, but not always, placed between family and genus. An example of a complete hierarchy used in the classification of a large group of animals (e.g., mammals) is as follows:

Kingdom
 Phylum
 Subphylum
 Superclass
 Class
 Subclass
 Infraclass
 Cohort
 Superorder
 Order
 Suborder
 Infraorder
 Superfamily
 Family
 Subfamily
 Tribe
 Subtribe
 Genus
 Subgenus
 Species
 Subspecies

This example has twenty-one levels. Use of all possible super-, sub-, and infra-levels between kingdom and subspecies would give thirty-four, probably more than is ever really needed in practice.