**Placement within genera**

Ideally, a species is given a formal, scientific name, although in practice there are very many unnamed species (which have only been described, not named). When a species is named, it is placed within a [genus](http://en.wikipedia.org/wiki/Genus). From a scientific point of view this can be regarded as a hypothesis that the species is more closely related to other species within its genus (if any) than to species of other genera. Species and genus are usually defined as part of a larger taxonomic hierarchy. The best-known taxonomic ranks are, in order: [life](http://en.wikipedia.org/wiki/Life), [domain](http://en.wikipedia.org/wiki/Domain_(biology)), [kingdom](http://en.wikipedia.org/wiki/Kingdom_(biology)), [phylum](http://en.wikipedia.org/wiki/Phylum), [class](http://en.wikipedia.org/wiki/Class_(biology)), [order](http://en.wikipedia.org/wiki/Order_(biology)), [family](http://en.wikipedia.org/wiki/Family_(biology)),[genus](http://en.wikipedia.org/wiki/Genus), and species. This assignment to a genus is not immutable; later a different (or the same) taxonomist may assign it to a different genus, in which case the name will also change.

In biological nomenclature, the name for a species is a two-part name (a [binomial name](http://en.wikipedia.org/wiki/Binomial_nomenclature)), treated as [Latin](http://en.wikipedia.org/wiki/Latin), although roots from any language can be used as well as names of locales or individuals. The [generic name](http://en.wikipedia.org/wiki/Genus) is listed first (with its leading letter capitalized), followed by a second term. The terminology used for the second term differs between zoological and botanical nomenclature.

* In zoological nomenclature, the second part of the name can be called the [specific name](http://en.wikipedia.org/wiki/Specific_name_(zoology)) or the specific epithet. For example, gray wolves belong to the species *Canis lupus*, coyotes to *Canis latrans*, golden jackals to *Canis aureus*, etc., and all of those belong to the genus *[Canis](http://en.wikipedia.org/wiki/Canis" \o "Canis)* (which also contains many other species). For the gray wolf, the genus name is *Canis*, the specific name or specific epithet is *lupus*, and the binomen, the name of the species, is *Canis lupus*.
* In botanical nomenclature, the second part of the name can only be called the [specific epithet](http://en.wikipedia.org/wiki/Specific_name_(botany)). The 'specific name' in botany is always the combination of genus name and specific epithet. For example, the species commonly known as the longleaf pine is *[Pinus palustris](http://en.wikipedia.org/wiki/Pinus_palustris" \o "Pinus palustris)*; the genus name is *Pinus*, the specific epithet is *palustris*, the specific name is *Pinus palustris*.

This binomial naming convention, later formalized in the biological [codes of nomenclature](http://en.wikipedia.org/wiki/Nomenclature_Codes), was first used by [Leonhart Fuchs](http://en.wikipedia.org/wiki/Leonhart_Fuchs" \o "Leonhart Fuchs) and introduced as the standard by [Carolus Linnaeus](http://en.wikipedia.org/wiki/Carolus_Linnaeus" \o "Carolus Linnaeus) in his 1753,*Species Plantarum* (followed by his, 1758 *Systema Naturae*, 10th edition). At that time, the chief biological theory was that species represented independent acts of creation by [God](http://en.wikipedia.org/wiki/God) and were therefore considered objectively real and immutable, so the hypothesis of common descent did not apply.

