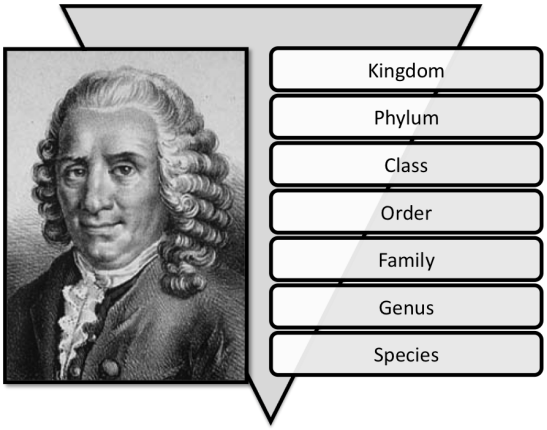
Linnaeus and Classification

> *The first step in wisdom is to know the things themselves; this notion consists in having a true idea of the objects; objects are distinguished and known by classifying them methodically and giving them appropriate names. Therefore, classification and name-giving will be the foundation of our science.*
>
> **— Carolus Linnaeus**
> *Systema Naturae* (1735)

"*The first step in wisdom is to know the things themselves.*" To learn about the world, we need to know what is in the world; to know the names of things and how they are related to each other. Scientists have invented many ways to name and classify the things in the world, but one scientist's name stands out from all of the others: Carl Linnaeus.



Born in Sweden in 1707, Carl Linnaeus is the 18th Century's greatest biologist and zoologist. He is remembered for inventing a practical way of naming and classifying all living things. Scientists still use his system, 250 years after he invented it.

Although naming living things is part of the scientific process, humans have been doing it for a long time. Some scientists believe that the first human languages were lists of names for things.

Other scientists believe that it wasn't naming things that started language, but that other great human interest: talking about people and relationships. And relationships are all about classifying. Who is a friend? Who is an enemy? Who can I trust? Who owes me a favour? Humans classify all of the time.

But you can't classify a living thing until you know it's name. So classification and naming go together. Linnaeus knew this. Before he invented his system, naming was about describing. Names were long and difficult to use. A woodland violet was known as *Viola floribus radicalibus corollatis ortientibus caulinis apettalis seminiferis* which is Latin for: *the short stemmed, free petaled, fruiting violet.* Linnaeus renamed it *Viola*

mirabilis. His system is called *binomial* because every living thing gets two names. *Viola* is the name of the type of plant (violet) and *mirablis* is the name for the exact species. The same pattern works for *Homo sapiens* (human); *Bellis perennis (daisy) Tyrannosaurus rex* and every other living thing, past and present.

The first name (with a capital letter) is known as the genus. This tells you what type of living thing it is. For example, the garden spider belongs to a genus called *Araneus*. Roses belong to the genus *Rosa*.

The second name tells you exactly which species it belongs to. The discoverer gets to choose this name. Some get named after a person, for example ..... Other are named to be descriptive, for example.... There are even names meant to be funny; there is a beetle called *Agra cadabra* (try saying it out loud). Can you work out who this species of fungus was named after: Spongiforma squarepantsii?

The only known specimen of Darwinilus sedarisi (Credit: Natural History Museum)

It is possible that someone reading this will discover a new type of living thing (in fact, there are so many species left to discover, that everyone who reads this could discover a new species. Scientists estimate there are between 5 and 10 million species still undiscovered). Discovering a new species will be hard work, but even when you have your new plant, animal or fungus, you will still have a lot more work to do.

The first thing to do is to check it really is new. The way to do this is to compare it to every example of similar species. Every species that has ever been discovered has an example specimen kept in a museum. This is called the “specimen type.” Your new species will be kept in a museum too and be the “specimen type” for your discovery.

Finally, unless you tell the world about your discovery, someone else can still beat you to it; you need to publish your discovery. There are important magazines (journals) especially for printing scientific discoveries. Once your discovery has been published, you can bet that other scientists will want to check it really is new; they will check the

journals and type specimens. If you haven’t done your research properly, you will get found out!

Linnaeaus' system of naming and classification was not the first, and it probably won't be the last. It has been criticized ever since it was first published (some scientists complained that the horse and dog should be in a category together because they both work on farms). There may be other systems in the future, but Linnaeus’ binomial system has been very effective for over 250 years.

Finally, a question: who is the homo sapiens type specimen? The answer: Carl Linnaeus.