Faculty of Science

Department of Medical Technology

((General plant sciences))
1st stage

Lab (7)

Scientific Names and Classification

By

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Lab. 7 Scientific Names and Classification

Our species has always needed to name plants and animals that were harvested for food or avoided for survival. Problems arose when different cultures tried to talk about organisms that bore different names originating in very different languages. Karl von Linné—a Swedish botanist better known as Carolus Linnaeus—solved the problem. In 1758, Linnaeus proposed a system for classifying organisms. He published it in his book, Systema Naturae.

In this system, each species is assigned a two-part name; for this reason, the system is known as **binomial nomenclature**. The names are based in the universal language: Latin. The first part of the scientific name is the **genus**, and it is always capitalized. (The plural is "genera"). The second part is the **species** epithet. The entire name is written in italics. Our own species, for example, was given *Homo sapiens* (it means "man who is wise").

Linnaeus' system gives each species a unique identity. The system also fulfilled a second need of humans: the need to classify things.

Living things were first classified as plants or animals. These kingdoms were subdivided into smaller categories called classes, and these into still smaller divisions: genera.

Originally, an organism was placed into a subgroup with other organisms on the basis of shared physical traits. After Charles Darwin awoke the world in 1859 with his book, On the Origin of Species, the evolutionary history of organisms became an important part of their classification. Today, sophisticated techniques such as DNA sequencing are essential tools used by taxonomists (scientists who classify living things).

Each genus contains species that share common ancestry. For example, because the wild dogs—wolves (*Canis lupus*) and coyotes (*Canis latrans*)—arose from a recent common ancestor, they are placed in the same genus: *Canis*. Red foxes (*Vulpes vulpes*) are wild dogs but they are not as closely related to wolves or coyotes and so they are placed in a different genus: *Vulpes*.

A current and popular classification system consists of eight main categories:

- **domain**
- **kingdom**
- **phylum**
- **class**
- **order**
- **family**
- **genus**
- **species.**

Common name: These are used locally and may vary by region or country.

Scientific name: These are unique names used by the scientific community to accurately and universally identify species.

Examples:

Gray wolf (*Canis lupus*)

Royal grevillea (*Grevillea victoriae*)

Onion

Scientific classification	
Kingdom:	Plantae
Division:	Magnoliophyta
Class:	Liliopsida
Order:	Asparagales
Family:	Alliaceae
Genus:	*Allium*
Species:	*A. cepa*

Drosophila melanogaster	
Scientific classification	
Kingdom:	Animalia

Phylum:	Arthropoda
Class:	Insecta
Order:	Diptera
Family:	Drosophilidae
Genus:	*Drosophila*
Subgenus:	*Sophophora*
Species group:	*melanogaster*
Species subgroup:	*melanogaster*
Species complex:	*melanogaster*
Species:	**D. melanogaster**
Binomial name	