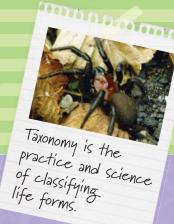
The Taxonomy of Life







The Domains of life

Life forms are divided into two broad Domains: the prokaryotes and the eukaryotes.

Prokaryotes have small, simple cells that do not contain a cell nucleus. They are often considered to be very primitive organisms – some of the first to have evolved. Yet they are remarkably hardy and have persisted until today. Some have evolved to live in very extreme environments.

Eukaryotes are characterised by more complex cell structures. Each cell contains a nucleus and often other 'organelles' that perform specific functions.

Kingdom

As modern DNA techniques enable biologists to understand so much more about life on earth, scientists are discovering that life is far more complicated than previously thought. This is particularly true of the small microbial forms of life, and some forms of 'fungi'.

While there is on-going debate about the 2 or 3 microbial Kingdoms, biologists agree on the three higher Kingdoms – Plants, Animals and Fungi.

Phylum

Phylum groups organisms based on both their general body plan and how internal organs develop, which tends to reflect their evolution.

Phyla (the plural of Phylum) may be hard to guess ... for example, seemingly different-looking, spiders and crabs both belong to the Phylum Arthropoda; whereas earthworms and tapeworms are similar in shape but are from different Phyla.

Humans belong to the Phylum Chordata, which refers to animals who (for at least some period of their life cycle) have a hollow dorsal nerve cord, some particular mouth and throat structures for feeding and breathing, and a post-anal tail.

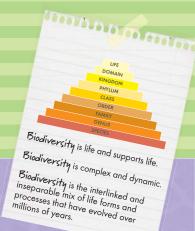
Class

There are no hard rules that a taxonomist needs to follow in describing a class, but for well-known life-forms there is generally good agreement e.g., mammals.

Order

Most of the organisms being counted here at BioBlitz are being sorted by specialists in particular Classes (e.g., Insects) and Orders (e.g., beetles, moths and butterflies)

Taxonomy Examples





Humans

- Domain Eukarya
- Kingdom Animalia/Metazoa
- Phylum Chordata
- Class Mammalia [all mammals]
- Order Primates [arboreal prehensile locomotion; terrestrial bipedal leaping in some cases; Strepsirrhini, Prosimians, also included, oldest living primates, common ancestor with them]
- Family Hominidae [great apes, hominids; fist-walking; family with Ponginae, Orangutans also included, oldest living ones, common ancestor with them]
- Genus Homo [or humans; specific and specialized development of memory/learning/teaching/learning application (learning driven ethology)]
- Species Homo sapiens [further development and specialization of learning application); active
 environment transformation, acclimatization and control; infrastructures and advanced technology]

Puriri Moth

- Domain Eukarya
- Kingdom Animalia/Metazoa
- Phylum Arthropoda [creatures with exoskeleton and jointed limbs]
- Class Insecta [all insects]
- Order Lepidoptera [scaled wings, foreleg with moveable process for antenna-cleaning etc.]
- Family Hepialidae [swift moths or ghost moths; tongue reduced and non-functional; antennae short; moderately robust to very large and robust moths]
- Genus Aenetus [splendid ghost moths; colour usually green, often with white markings; size large to very large; male with scent-scales on hindlegs; larva initially fungus-feeding on forest floor, later boring in tree-trunks]
- Species Aenetus virescens [puriri moth; restricted to New Zealand's North Island; colour variable; females with brown
 markings; differing from Australian species in details of wing markings and genitalia; larva in various native and introduced trees
 feeding for up to 5 years, grazing on scar tissue from hole in the trunk.]





Basket Fungus

- Domain Eukarya
- Kingdom Fungi
- Phylum Basidiomycota [mushrooms, boletes, bracket fungi, stink horns, jelly fungi, rusts and smuts]
- Class Agaricomycetes [mushrooms, boletes, bracket fungi, and stink horns]
- Order Phallales [stinkhorns, lattice stinkhorns, and some false-truffles with spores enclosed inside a truffle-like fruiting body; mostly saprobes on soil and rotting plant material; spores with strong odour like rotting meat to attract insects for spore dispersal]
- Family Clathraceae [lattice stinkhorns basket fungi and flower fungi]
- Genus Ileodictyon [basket fungus; mostly in the Southern Hemisphere]
- Species Ileodictyon cibarium [endemic to New Zealand, often common in wood chip mulches.]

Lancewood

- Domain Eukarya
- Kingdom Viridiplantae [Includes the common ancestor of all green plants. United by the occurrence of chlorophyll b, starch storage, stellate flagellar structure, gene transferes including green algae, mosses, liverworts, hornworts, ferns, lycopods]
- Phylum Spermatophyta [Includes the common ancestor of all seed plants. Includes cycads, ginkgos, conifers and flowering plants]
- Class Magnoliophyta [Includes the common ancestor of all flowering plants.]
- Order Apiales [Includes the common ancestor of anise, carrots, celery, coriander, ginseng, English ivy and poison hemlock. United by
 umbrella-shaped flower heads, foliage that is often aromatic, flowers generally reduced, ovary inferior, styles swollen at the base to form a
 nectar-secreting structure.]
- Family Araliaceae [Includes the common ancestor of Ginseng, Pseudopanax, Shefflera] dioecious
- Genus Pseudopanax [Includes the common ancestor of the five finger and lancewoods. Shrubs or small trees with variable leaves, flowers are male or female (dioecious) and fleshy fruits]
- Species Pseudopanax crassifolium [Horoeka, lancewood. Includes the common ancestor of all species of Pseudopanax
 crassifolium. Trees reaching 13 m. The juvenile form is long persistent with deflexed, rigid linear leaves and flowers in compound umbels]

