



Stream Team Academy
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WHATOLOGY?

An Educational Series For Stream Teams To Learn and Collect

Whatology: Looking at a Bit of Etymology for Scientific Terms

by Chris Riggert

Ever hear the phrase, “It’s all Greek to me?” Well, when you begin actually using words with Greek roots, things can get really confusing! The study of a particular discipline is an “-ology.” Such words are formed from Greek or Latin roots with the terminal “-logy” derived from the Greek suffix (*-logia*, speaking), from (*legein*, to speak). The word etymology itself comes from the Greek (*étymon*, the true meaning of a word), and is the study of word origins.

You have most likely heard several of these: psychology (the study of mental processes in humans); seismology (the study of earthquakes), etc. You use “-ologies” every day. For example, you use “chronology.” It is from the Greek *chronos* meaning “time.”

You also use “morphology.” “*Morpho-*” is from the Greek meaning “form, shape, or structure.” So morphology is the study of forms and helps you distinguish between people and places.

Some of these “-ologies,” such as “biology” are very generic. For example, the bio part of biology stems from Greek (*bios*, life; so “biology” is literally translated as the “study of life.” These “-ologies” can be more specific. For example, a branch of biology is zoology, which is the study of animals. However, some are even more specific, often limited to a single group of organisms. Below are some of these more specific “-ologies” and what they mean. Some will make sense, but some may need further explanation.

Some of my favorite “-ologies”

Algology is the branch of botany specifically studying algae. Alga is the singular term for algae. This study is also known as Phycology.

Arachnology is the study of the Class Arachnida, including spiders and their kin. It is from the Greek *arachne* meaning “spider,” which probably is cognate with Latin *aranea* “spider, spider’s web” (from *aracsna*).

Astacology is the study of the Astacidea, which is the Infraorder for crayfishes. It comes from the Greek *astakos* meaning “lobster.” The word has stuck with lobster-like crustaceans including crayfishes. It wasn’t until the early 1800s when it was realized that marine lobsters and crayfishes were in fact very different.

Bioclimatology is the study of the effects of climate on living organisms.

Chelonology is the study of any of various aquatic and land reptiles having a bony

shell and flipper-like limbs for swimming, namely turtles. It is from the Greek *chelon* meaning “tortoise.” The term “chelonology,” introduced by Polish turtle expert M. Mlynarski (1969), was based on Strauch’s (1862) “Chelonologische Studien.”

Dendrochronology is the study of the age of trees and the records in their rings. It is a branch of Dendrology (the study of trees). It is from the Ancient Greek *dendron* meaning “tree” and the Greek *chronos* meaning “time.”

Ecology is the study of the interrelationships between living organisms and their environment. The term *oekologie* was coined in 1866 by the German biologist, Ernst Haeckel, from the Greek *oikos* meaning “household” and *logos* meaning “study;” hence, the “study of the household of nature.”

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Entomology is the study of insects. It is from the Greek *entomon* meaning "insect." *Entomon* is related to *entomos* meaning "having a notch or cut (at the waist)," so called by Aristotle in reference to the segmented division of insect bodies, from *en-* meaning "in" and *temnein* meaning "to cut."

Fluviology is study of watercourses. It is from the Latin *fluvialis*, meaning "river."

Fluvial Geomorphology is the science dealing with the shaping of the earth's topographic features by stream flow. It is a combination of the Latin *fluvialis* meaning "river," the Greek *geo* meaning "Earth" and *morph* meaning "form."

Geomorphology is the study of present-day landforms and the processes that create them. The term is derived from the Greek *geo*, meaning "Earth," and *morph*, meaning "form."

Herpetology is the study of reptiles and amphibians. It is from the Greek *herpeton* meaning "to creep."

Hydrology is the study of the movement and distribution of water throughout the Earth, and thus addresses both the hydrologic cycle and water resources. It is from the Greek, *Hydrologia*, the "study of water."

Hydrogeology is the part of **hydrology** that deals with the distribution and movement of groundwater in the soil and rocks of the Earth's crust (commonly in aquifers). It is from the Greek *hydro* meaning "water," and **geology** meaning the study of rocks.

Ichthyology is the study of fish. It is from the Greek *ichthys* meaning "fish."

Limnology is the study of fresh water environments, particularly lakes. It is from the Greek *limnos* meaning "pool, lake, or swamp."

Malacology is the study of mollusks. It is from the Greek *malakos* and the Latin *mollis* meaning "soft."

Ophiology is the study of snakes. It is from the Greek *ophis* meaning "snake."

Pedology is the study of soils and soil formation. It is the branch of soil science that deals with soil genesis, morphology, classification and distribution. It is from Russian *pedologiya*, and from the Greek *pedon* meaning "soil, earth."

Phytology is the study of plants; botany. It is from the Greek *phyton* meaning "plant," literally "that which has grown," from *phyein* "to grow."

Speleology is the study or exploration of caves. It is from the Latin *speleum* (from the Greek *spele*) meaning "cave."

To summarize . . .

Greek and Latin terms and phrases are used as a basis for scientific nomenclature because these languages are no longer spoken and are very static. Because of this, scientists chose to use these early prefixes, root words, and suffixes to provide these new descriptive (scientific) names. If you are familiar with the meanings of these root words, you can easily decode new and old scientific terms by simply translating its name.

So, the next time you meet a Fluvial Geomorphologist, instead of nodding your head with a blank stare, you can confidently reply, "Oh, so you study the shaping of the earth's topographic features by stream flow!"



Sources:

- <http://en.wikipedia.org/wiki/-ology>
- <http://www.multiology.com/AllOlogies.htm>
- <http://www.etymonline.com/index.php?l=a&p=18>
- <http://ancienthistory.about.com/library/weekly/aa052698.htm>
- http://www.orangeusd.k12.ca.us/yorba/greek_and_latin_roots.htm
- http://www.nps.gov/archive/macala/learnhome/cur_68_gre.pdf
- <http://www.ieed.nl/cgi-bin/query.cgi?basename=/data/ie/greek&root=leiden>