

## MYRMECOLOGY: IS IT THE CORRECT TERM?

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### Abstract

We discuss the etymology and proper use of the term “myrmecology”. According to the *sensu stricto* etymology of the word the term is inapt. We provide the veracious orthography based on modern Greek language Romanization. Nevertheless, as it has been the case with other biological terms and species designation etymologies, we remain by the use of the original word.

### Introduction

The English word “myrmecology” (/mɜrmiˈkɒlədʒi/) was first used by William Morton Wheeler (1865 – 1937) maybe in consultation with others such as A. Forel, (Wheeler, 1910) and has the meaning of the scientific study of ants. For more than a century, the word is widely used by scholars studying aspects of the natural history of ants. Recently, a debate between the two authors initiated a more thorough investigation on the origins of the term.

Etymologically, the word *myrmecology* (*myrmeco*-s + *log*-ia) derives from the Greek words *μύρμηξ* (*myrmex*, meaning “ant”) and the word *λόγος* (*logos*, literally meaning “speech” but also used as “to study”). The rule is that all Greek compound words are formed by the first noun in its genitive form – in this case *τοῦ μύρμηκος* (/tuˈmirmi:kɔs/) – and the textual radical of the second word with the appropriate suffix. The etymology of these words goes further as follows:

#### Myrmex

From the ancient Greek *μύρμηξ* (/ˈmiː.ərmiːks/). Of Proto-Indo-European origin, possibly from the type *μύρβηξ* (/ˈmiː.ərviːks/) (by anterograde assimilation). The same type (théma) *μύρβ-* is also the origin of other indo-european words meaning “insect” [m̥rw~, contracted form] producing types such as *morwi*~, *mour*~, *meur*~ [see: *vamrá* (Sanskrit); *maoiri*~ (Avestan, ancient Iranian); *moirb* (ancient Irish); *mraviji* (ancient Slav); *morovij* (ancient Russian); *maurr* (ancient Scandinavian); *myra* (ancient Swedish)] (Babiniotis, 1998).

Another proposed etymological origin of the word *myrmex* is from the ancient Greek verbs *μείρομαι* (/ˈmiː.rɔmɛ/) meaning “being part of something, to divide, to halve”, etc. or *μερμερίζω* (/mɛrmerˈizɔː/)

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meaning “to take care of something”. The word *μερμερίες* [théma: μέρ~ (/mérme'ries/); of indo-european origin meaning “place” or “position”] is a derivative ancient Greek word meaning “allocated positions”. (Sylburg, 1816; Babiniotis, 1998; Tziropoulou Efstathiou, 2009).

The first attempt to provide an etymology and the transliteration to the Romanized form from a scholar is probably that from Johannes Upmarck (1706). The Latin word *formica* derives from the word *myrmex*, which in its genitive form becomes *myrmikos* (*vide supra*). The ancient Æolic form of the word was *βύρμηκος* (/vi:ərmi:kos/), and by phonetic derivation became *furmēca* in Latin and finally *formīca* (by anterograde assimilation) (Valpy, 1828).

### Logos

The noun of the ancient Greek verb *λέγω* (/ˈleɣo:/), which has the original meaning of “to collect, to group” and thus, “to reiterate (*a group of*) words out loud, to speak up (*a collection of words*)” (Babiniotis, 1998). *Λόγος* (/ˈlɔɣos/) originally meaning “speech, oral expression” later expanded into meaning “reasoning, explanation, consideration” and when used as part of some compound words “avocation, the study of”, and thus contrasting to the noun *ἔργον* (/ˈeryɔn/) meaning “work (n.), task, deed” (Babiniotis, 1998).

### **Discussion**

One should think whether terms used in life sciences and have a Greek or Latin origin should be transliterated enniologically (i.e. conceptually), etymologically, phonetically or according to the International Standards Organization’s (ISO) latest system 843:1997.

The term *myrmecology* thus could be transliterated or ascribed in numerous ways. One must take into account the fact that the word is of ancient Greek origin. But as mentioned previously, the coining of the word was much later at the beginning of the 20<sup>th</sup> century (Wheeler, 1910). According to the ELOT (2001), the UN (1996, 1987) and the ISO (2003) the transliteration should follow the rules of ‘modern Greek’. Because the ISO, UN, and Greek, British, and American governments have all approved an essentially equivalent standard for transcription of Modern Greek into Latin letters, romanization scheme employs its ‘Modern Greek’ system for all works and authors following the Fall of Constantinople in 1453. The current commonly accepted word for the term in Greek is *μυρμηγκολογία* (/mirmigɔlɔˈɣi:a/) as the archaic word *μύρμηξ* (*v.s.*) has linguistically evolved into *μυρμήγκι* (/mirˈmigi/) during the past 150 to 200 years (a transitional stem towards the diminutive word for “ant” which is *μυρμηγκάκι* (/mirmiˈgaki/): “little ant”).

Phonetically, the closest transliteration of the word in English would then be *myrmigolog~ia* (~y), as the diphoneme *γκ* has the sound of *g* (/g/ or /ɟ/). According to the ISO standard, the transliteration would be *myrmîgkolog~ía* (~y) and finally etymologically would be *myrmîkolog~ia* (~y). Note that in all three cases the characters missing are *e* and *c*.

That said, the spelling of *myrmecology* has over a 100-year tradition. It was probably coined in the “correct” manner by a (or more than one) person with training in classical languages and with good understanding of the conventions of scientific word coining from classical roots and their correct combining forms. Most relevant to this case was the convention to render Greek roots and words as though they were Latin, according to a centuries-old standard of transcription, going back perhaps all the way to the time of Ancient Rome (when Greek was pronounced quite differently from the way it is today).



*Messor* ants preparing for their nuptial flight (October 2014) around their nest on the Athens Akropolis. Chris Georgiadis (CC BY 2.0)

On the other hand, due to its current spelling in English, there has been even the case where people (obviously unaware of basic etymological ancestry) have misinterpreted the etymology of the word as deriving from the words *myrmex* and *ecology* (of Greek origin: *οἰκολογία* (/i'kolɔ'ɣi:a/) from the words *οἶκος* (/i'kɔs/) meaning “house, residence” and *λόγος* (*v.s.*)). The definition of the word ecology provided by the Oxford English Dictionary (OED, 2014) is: “The branch of biology that deals with the relations of organisms to one another and to their physical surroundings.”

In that sense, when one uses the term *myrmecology* having in mind the above mentioned etymology, confines the subject of the study of ants *to their relations to one another and to their physical surroundings*. But, it is more than that. Aspects of their biology, evolution, phylogenetics and numerous other branches of their natural history are enniologically omitted.

The term under consideration has been long and well established in texts, speeches and in scholars' mind. Based on the present text, the orthography might change slightly to firmly indicate the integrated and spherical study of ants. The “correct” term could then be **myrmikology** and its derivatives (e.g. **myrmikologist**, **myrmikological** etc.). Be that as it may, the pronunciation of the words or roots in question in spoken or written modern Greek has no relevance to how they should be spelled or spoken in other languages. In reality, only *new* scientific terms should be coined according to proper etymological, enniological or phonetical rules. Unfortunately or fortunately, these do not apply to established terminology. Finally, just as in the cases of other terms or genera and species names (see Emery, 1912; Bolton, 1994; Bolton, 2014) even commonly acknowledged, etymologically imprecise terms (e.g. *Crematogaster*) are still used both by tradition and by ruling of the ICZN.

We hope that this discussion will clear the occasional misunderstanding that might be caused by the etymologically anorthography of the term, and above all be used as a motive to light a spark of media interest towards the science we serve and cherish.

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