

Aqua Latin 101

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Why use Latin?

We have all at one time or another wandered through a local fish store and seen the name of a fish, invertebrate or plant listed only by its common name, with no Latin or scientific name posted. This of course leads to problems as we ask ourselves "What exactly am I looking at?" Go to one store and you get one name. Go to another, and you get a second name. Go to a third store and you may get the first name applied to a different specimen.

These common names are quite convenient for the local fish store, as the name can often be a hook or incentive for a person to buy a fish or plant. One example is the plant *Brasenia schreberi*. While likely not to be found in the aquarium, it is a potential pond plant native to Florida. A floating leaf perennial with a rhizome, the leaf stalk attaches to the center of the elliptical-shaped floating leaves. It also has a unique feature in that the underside of the leaf and leaf stalk has a slimy coating, leading to one of the two common names for the plant – "snot-bonnet". The more common name, and probably more socially acceptable name, is "watershield". Now, not many people are likely to buy a "snot-bonnet" from their local source, but might pay for a "watershield".

As another example of local fish stores promoting a specimen in an attractive way, the name "bumblebee catfish" is cute, even fun to say. But thinking of the bumblebee catfish, do you have an image in mind? Have you seen one? Okay, which one is it? *Microglanis iheringi* or *Pseudomystus siamensis*?

Microglanis iheringi



Pseudomystus siamensis



Very similar, aren't they? But *Microglanis iheringi* is a small catfish (5.5cm or 2") native to Venezuela and *Pseudomystus siamensis* is a larger catfish (15cm or 6") native to Thailand. So, we have two catfish that are similar in appearance and being sold under the same name, yet are different in size and are from completely different parts of the world.

However, confusion in naming doesn't stop there. Lets use *Atyopsis moluccensis*, a relatively large (12cm or 5") filter feeding shrimp native to Southeast Asia, as another example. In visiting only five websites, here (alphabetically) are some of the commons names of this attractive shrimp:

- Asian fan shrimp
- Asian filter shrimp
- bamboo shrimp
- brine shrimp
- common fan shrimp
- fan shrimp
- flower shrimp
- giant bamboo fan shrimp
- Malaysian rainbow shrimp
- rainbow shrimp
- rock shrimp
- Singapore filter shrimp
- Thai filter shrimp
- wood shrimp

So now we have fourteen different (although some are similar) names for the same creature.

But the problem extends further still. The keeping of aquaria is a global hobby. The same species of fish that is in your tank can probably be found in Germany, Japan or France. However, different countries, and indeed even different geographic regions within a country, will call a fish or plant by a different name and possibly in a different language.

All of these potential items of confusion, samples from two different genus being identified under the same name, a single species being identified by multiple names, and differing names in differing languages, can be corrected by listing the fish by its proper Latin name. Latin, or scientific names, are unique plant and animal names that are used globally by scientists, aquatic horticulturalists, environmental managers, aquatic hobbyists and others that provide the same name for the same organism no matter where you live or what language you speak.

History and Current Usage of Latin For Naming Life-forms

In the 1700's there was an increase in world travel and voyages of exploration originating from Europe. With these voyages new and exotic (at least to Europe) organisms were being introduced to the European civilizations. However, due to the vast number of discovered and revealed life-forms, it became apparent that there were too

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many items to describe, too few people to describe them, and no system which could be used for descriptive purposes. In response to this, the *Systema Naturae* (or Nature's System), a universal system for classifying all living beings, was devised by the Swedish scientist Carolus Linnaeus in 1758. Since Latin was a dead language (or a language that was no longer learned as a native tongue), politically neutral due to its status as such, not subject to change, but still taught as part of the formal education of the time, Linnaeus chose it to be the basis for his *Systema Naturae*. However, he did not just use the Latin language as it existed at that time, but adapted it to permit the usage of words from other languages (most notably Greek words), words of local usage, and eponyms, or words derived from the names of people and places. The usefulness of the *Systema Naturae* was quickly recognized and accepted throughout Europe.

The system is a taxonomy, or science of classification, used to describe plants and animals. It is a hierarchy that starts with Kingdom and descends to Species. Simplified, without subdivisions, it reads:

- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species

The *Systema Naturae* as designed by Linnaeus was a binomial system, or a system listing two terms. In this case the binomial consisted only of the genus and the species. "Genus" is a classification of an organism by grouping it with other closely related organisms. The classic definition of "Species" is a group of organisms capable of interbreeding and producing fertile offspring. It stated that while members of different species of the same genus could inter-breed with one another, this was unlikely, and if they did, either no offspring would be produced, or any offspring that were produced would not be fertile. However, with advances in the study of what constitutes a species, new definitions have had to be established. There are recorded examples of fish from what were classically defined as different species and even different genera successfully breeding with one another and with the resulting offspring being fertile with both originating species. Due to these recorded breedings, the concept of what constitutes a species has been redefined. Now a species is considered to be a self-sustaining population of like individuals found within a defined geographical range. The emphasis has been shifted from the ability to successfully reproduce to a given population that is able to reproduce that is separated from another given population by geographic and other barriers. Therefore, while both groups may be able to reproduce when brought into contact with one another, they are considered to be different species if in nature they are found in areas that are distinct and separate from one another. Regarding terminology, using the example of *Microglanis*

iheringi from above, "*Microglanis*" refers to the genus and "*iheringi*"

However, it was realized that some species consist of two or more sub-species that are capable of breeding. This led to the introduction of a trinomial system. In the family of rainbowfish, there exists the *Melanotaenia splendida splendida*. But there is also *M. splendida inornata*, *M. splendida rubrostriata* and *M. splendida tatei*. The third name in the trinomial system, in the above cases "*inornata*", "*rubrostriata*", and "*tatei*", is the sub-specific. The first sub-species to be discovered and described is known as the nominate sub-species or the nominate form. Therefore *M. splendida splendida* is the nominate sub-species

Rules for Latin Usage: Written Latin

The taxonomic system of Latin as devised by Linnaeus was and still is intended primarily for written communication. As such, there are several rules that are standard when using this format, and may be useful to those submitting Breeders Award Program reports, and to simply understand some of the information that is being presented.

First, when the name of a fish or plant is being written, it will contain two (binomial) or three (trinomial) parts. The first will be the genus, the second the species, and the third (if present) the sub-species. The genus is always capitalized, but the species and subspecies are never capitalized. This is true even if the species or subspecies name are eponyms, or named after someone. Therefore "*Melanotaenia splendida tatei*" is correct, while "*Melanotaenia Splendida Tatei*" (even though "Tatei" refers to someone) is not.

Second, when writing a name using scientific Latin, the name is always either italicized (*Melanotaenia splendida tatei*) or underlined (Melanotaenia splendida tatei), but never both.

Third, when writing the species name after its first appearance in an article, you are able to use an abbreviation for the genus name by simply using the first letter of the genus followed by a period, and then the full species and sub-species names, such as *M. splendida tatei*.

Finally, if you are referring to a singular but unidentified species within a genus, then the proper form is to write the genus name followed by "sp.", such as *Melanotaenia* sp. If you are referring to some but not all of a genus, then "spp." will follow the genus name, such as *Melanotaenia* spp. If referring to all species within a genus, only the genus name is used, such as *Melanotaenia*. Note that the genus and species name are italicized, but "spp." and "sp." are not.

Rules for Latin Usage: Spoken Latin

I'm sure that we have all at one time or another stumbled over the pronunciation of the scientific name of a fish or plant that we are keeping. To help you, here are some basic hints, rules, and suggestions on how to use spoken Latin.

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First, and most important, remember that Latin is a dead language. But even when Latin was being spoken across the ancient Roman Empire, there were regional differences in pronunciation. Therefore, there are rules on how to speak Latin, but variations in pronunciation will and do occur. The best approach is to pronounce Latin names as closely as possible to how they appear.

Second, don't be afraid to use Latin. The scientific names may appear intimidating, and this may lead to a certain hesitation in trying to pronounce the words. But we have no problems pronouncing names that are from languages other than English. For instance we have no problem saying Japanese names such as Mitsubishi or Nokia, or German names such as Klaus Steinhaus.

So keeping that in mind, and realizing that this is a general overview (remember that Latin, even though dead, is a complete language and can take years of study to master), here are some general rules to help with pronouncing Latin;

- In Latin, all vowels are pronounced. (So in *Nymphoides aquatica*, you would pronounce it "Nym-pho-i-des", not "Nym-pho-ides".)
- If the Latin name is an eponym, or the proper name of a person or place, always pronounce the name as it should be, and then add the Latin ending.
- When two vowels are found together, such as the above *Nymphoides*, the first vowel is short.
- Latin was a phonetically written language, or one that was written based on how it sounds. Therefore make sure that you pronounce every syllable. (The exception to this is that the first consonant in paired consonants such as "ps" in *Pseudomystus siamensis*, "pt" in *Pterophyllum altum*, and the "ct" in *Ctenopoma muriei* is not pronounced.)

Latin Name Meaning

Remember that all names, when taken to their absolute basic meaning, describe something. For instance, my name, Derek Tustin, is derived from Theodoric Thurston. Theodoric means "Son of Thor". Thurston means "Thor's Stone". So my name literally means "Son of Thor, Thor's Stone". Let's also take Klaus Steinhaus. Klaus is derived from the Greek name "Nicholas" which means "Victory of the People". Steinhaus is derived from Stein, the German word for "Stone" and Haus, the German word for "House", thereby becoming "Stone House". So his full name means "Victory of the People, Stone House".

This is just as true for fish and plants. The scientific or Latin name means something. It can refer to physical attributes, breeding habits, origins, or it can be an honourific. If you examine the entire name, it can reveal information about the fish. Just as in the example of the names above, the Latin name can also reveal information. Take for example one of the beautiful rainbowfish from New Guinea, the *Melanotaenia sexlineata*. As you will see below "Melano" means black, "Taenia" means stripe, "Sex" means six, and "Lineata" means lined. So the Latin name of this fish literally means "Black-Stripe, Six-Lined". The Black-Stripe refers to the stripe that runs along the side of most fish in this genus, and the Six-Lined refers to the six lines along the side of the specific species.

Following is a list of some of the more common scientific name roots, their meaning, and an example of an organism (either fish or aquatic plant) with that root contained within the name.

Colours

aeneus (bronze) –
albo (white) –
albus (white) –
argentus (silver) –
auratus (golden) –
caeruleus (blue) –
chromis (colourful) –
erythro (red) –
flava (yellow) –
luteus (orange) –
melano (black) –
niger (black) –
nigro (black) –
purpurea (purple) –
roseus (pink) –

Corydoras aeneus
Tanichthys albonubes
Monopterus albus
Monodactylus argenteus
Melanochromis auratus
Champsochromis caeruleus
Labidochromis zebroides
Hyphessobrycon erythrostigma
Tilapia flava
Carasobarbus luteus
Melanotaenia utcheensis
Oxydoras niger
Tetraodon nigroviridis
Utricularia purpurea
Danio roseus

Numbers

mono (one) –
bi (two) –
tri (three) –
tetra (four) –
quinque (five) –
sex (six) –
octo (eight) –
multi (many) –
poly (many) –

Monocirrus polyacanthus
Corydoras bilineatus
Apistogramma trifasciata
Tetraodon fluviatilis
Cherax quinquecarinatus
Melanotaenia sexlineata
Leporinus octofasciatus
Glossolepis multisquamatus
Tyrannochromis polyodon

Markings and Descriptions

fasciatus (banded) –
lineatus (lined) –
maculatus (spotted) –
natans (that swims) –
ocellatus (spotted) –
punctatus (spotted) –
reticulatus (net-like) –
seriatus (in series) –
spilo (spot) –
splendida (bright) –
striata (striped) –
taenia (stripe) –
undulata (wavy-edged) –
zonus (banded) –

Leporinus trifasciatus
Aplocheilichthys lineatus
Xiphophorus maculatus
Salvinia natans
Astronotus ocellatus
Channa punctatus
Lebistes reticulatus
Aequidens biseriatus
Serrasalmus spilopleura
Melanotaenia splendida
Botia striata
Melanotaenia oktediensis
Cryptocoryne undulata
Hemigrammus erythrozonus

Size and Dimensions

grandis (large) –
lepto (thin) –
longi (long) –
macro (large) –
micro (small) –
minima (small) –
minor (smaller) –
nana (small) –
parva (small) –

Bathypagrus grandis
Rhamphochromis leptosoma
Aponogeton longiplumulosus
Macrobrachium dolatum
Microrasbora nana
Lemna minima
Lemna minor
Vallisneria nana
Cryptocoryne parva

Characteristics

calvus (bald) –
coryne (club) –
crypto (hidden) –
curvi (rounded) –
cyrto (curved) –
echino (spiny) –
furcatus (forked) –
geo (earth) –

Altalamprologus calvus
Cryptocoryne cordata
Cryptocoryne undulata
Laetacara curviliceps
Taeniolethrinops cyrtonotus
Echinodorus osiris
Pseudomugil furcatus
Geophagus steindachneri

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gibbi (humped) –	<i>Glyptoperichthys gibbiceps</i>
nudi (naked) –	<i>Nanochromis nudiceps</i>
phagus (eater) –	<i>Geophagus brasiliensis</i>
pseudo (false) –	<i>Pseudotropheus demasoni</i>
pugnax (fighting) –	<i>Betta pugnax</i>
tropheus (eater) –	<i>Pseudotropheus saulosi</i>
vulgaris (common) –	<i>Utricularia vulgaris</i>

Locations

palustris (swamp) –	<i>Ludwigia palustris</i>
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Body Parts

ceps (head) –	<i>Ancistrus nudiceps</i>
cephalus (head) –	<i>Nyassachromis microcephalus</i>
cara (head) –	<i>Cleithracara maronii</i>
flori (flower) –	<i>Samolus floribundus</i>
glosso (tongue) –	<i>Glossolepis incisus</i>
lepis (scale) –	<i>Datnoides microlepis</i>
pterus (wing/fin) –	<i>Xenotilapia spilopterus</i>
soma (body) –	<i>Rhamphochromis leptosoma</i>
sperma (seed) –	<i>Hygrophila polysperma</i>
stoma (mouth) –	<i>Helostoma temminckii</i>
rostris (nose) –	<i>Acestrorhynchus falcirostris</i>
odon - (tooth) –	<i>Trematocranus placodon</i>
gnathus (jaw) –	<i>Placidochromis macrognathus</i>
gaster (belly) –	<i>Naevochromis chrysogaster</i>
uro (tail) –	<i>Hemitaeniochromis urotaenia</i>

Termination Meanings

-anum (named after) –	<i>Gobiosoma yucatanum</i>
-ensis (comes from) –	<i>Aponogeton madagascariensis</i>
-folia (having leaves) –	<i>Utricularia graminifolia</i>
-formis (form of) –	<i>Monodactylus falciformis</i>
-iae (named after) –	<i>Simpsonichthys constanciae</i>
-iana (named after) –	<i>Azolla caroliniana</i>
-ica (comes from) –	<i>Cardinia japonica</i>
-icus (comes from) –	<i>Arnoglossus arabicus</i>
-ii (named after) –	<i>Rotala wallichii</i>
-odies (form of) –	<i>Pseudotropheus fuscooides</i>

Animals

capri (goat) –	<i>Caprichromis liemi</i>
crabro (hornet) –	<i>Pseudotropheus crabro</i>
leporinus (hare like) –	<i>Leporinus octofasciatus</i>

The above list, while long, is by no means comprehensive. There are literally thousands of scientific roots that are used to describe fish and aquatic plants. Should you be interested in doing a bit of detective work to find out what the name of a specific organism means, there are many sources available on the internet that will provide root word definitions. There are a number of facets of Systema Naturae, Latin and scientific names that I have glossed over for the sake of space. Items such as the gender of the root Latin, naming conventions, the identification of true Latin versus Greek root words, and much of modern usage has been omitted, but further research and study can provide you with a greater understanding.

We don't need to know the Latin or scientific name of the fish and plants we keep to enjoy them, but if we truly wish to understand them, to know where they came from and to appreciate them as a unique life-form, a basic understanding of their true name will aid us greatly.