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Scientific names are universally recognized because they are given in Latin, a timeless and unchanging language. Unlike modern languages, Latin is no longer evolving, ensuring stability and consistency in classification. Scientists worldwide can communicate accurately and precisely without confusion caused by regional languages. Since many early scientific works were written in Latin, it became the foundation of taxonomy and classification. By using Latin, researchers ensure that scientific names remain standardized across all disciplines and regions. Universal Scientific CommunicationLatin provides a common ground for scientists across the globe, eliminating barriers caused by language differences. If species were named in different languages, misunderstandings would arise in research, conservation, and medicine. Latin ensures that each species has a single, unique name that is recognized worldwide. This uniformity is critical in fields like zoology, botany, and microbiology, where miscommunication can lead to serious errors. Without Latin, the scientific community would struggle with ambiguity and inconsistencies. Stability in ClassificationLanguages constantly change, but Latin remains fixed and unaltered, making it ideal for naming species. If scientific names were in a modern language, they might become outdated as words evolve. Latin ensures that a name given centuries ago remains meaningful today. This stability helps researchers compare historical and modern data without confusion. The fixed nature of Latin makes it a reliable tool in taxonomy. Rooted in Historical KnowledgeMany early scientists, such as Carl Linnaeus, wrote in Latin because it was the language of academia at the time. The tradition continued as Latin terms already described various biological structures and traits. Using Latin ensures that newly discovered species fit within the existing scientific framework. Many terms used in anatomy, medicine, and biology have Latin origins, making it logical and efficient to maintain consistency. The historical foundation of Latin in science strengthens its use in nomenclature. Precision and ClarityScientific names in Latin follow strict naming rules set by the International Code of Nomenclature. These names clearly describe a species genus, family, and characteristics. Unlike common names, which vary by region, Latin names eliminate confusion and provide a precise identity for each species. For example, the lion is known by many names worldwide, but "Panthera leo" remains unchanged. This clarity is essential in research, conservation, and medicine. Avoiding National BiasUsing Latin prevents national or cultural bias in scientific naming. If species were named in modern languages, certain regions might have an unfair advantage in taxonomy. Latin is neutral, ensuring that no country dominates scientific classification. This neutrality promotes international cooperation in biology, zoology, and medicine. A universally accepted language allows discoveries to be shared and understood globally. Facilitating Scientific ClassificationLatin names follow a structured system, helping scientists classify organisms systematically. The binomial nomenclature system, introduced by Linnaeus, assigns each species a genus and species name. This method makes it easy to categorize and compare species based on evolutionary relationships. By using Latin, researchers ensure consistency in naming and grouping species. This systematic approach allows for accurate identification and classification. Aiding in Scientific ResearchLatin-based scientific names support consistency in research across different fields. Medicine, pharmacology, and botany rely on standardized names to avoid misinterpretation and errors. For example, "Aloe vera" is known worldwide by the same name, preventing confusion in medical studies. Latin ensures that researchers can accurately document and reference species. This is crucial for developing new treatments, medicines, and conservation efforts. Preventing Duplicate NamesThe use of Latin ensures that each species has a unique and distinct name. Without a standard naming system, different scientists might assign multiple names to the same species. The Latin-based system prevents duplication and maintains order in taxonomy. A clear and structured naming system is essential for cataloging biodiversity. Latin names prevent unnecessary confusion in scientific literature and databases. Enhancing Educational ConsistencyLatin names are used in textbooks, academic papers, and research, ensuring consistency in education. Students and scientists learn the same names regardless of their country or language. This uniformity simplifies scientific training and communication. Without a standardized system, learning species names would become complicated and inefficient. Latin provides a stable foundation for scientific education and global knowledge exchange. Assisting in Medical and Pharmacological StudiesMany medicinal plants and organisms are classified using Latin names to ensure accuracy in medicine. Pharmacologists and researchers rely on these names to avoid confusion in drug formulations and treatments. A single plant might have dozens of common names, but its scientific name remains universal. Latin-based classification helps in identifying species with therapeutic benefits. The precision of Latin names plays a vital role in global healthcare and pharmaceuticals. Benefits of Using Latin in Scientific Naming Universal Understanding: Latin names are recognized globally, avoiding language barriers. Stability: Unlike modern languages, Latin does not evolve, ensuring long-term consistency. Accuracy: Scientific names provide precise identification, avoiding confusion. Historical Continuity: Latin has been used for centuries in science and medicine. Neutrality: No country has an advantage in naming new species. Systematic Classification: The binomial system maintains order in taxonomy. Consistency in Education: Students and researchers worldwide use the same names. Tell the World: Post Your BlogSubmit Post Why Latin Remains the Language of Science Timeless and Unchanging: Latins fixed nature keeps names relevant for centuries. Logical and Structured: The binomial system makes classification easy. Eliminates Regional Variations: Avoids confusion caused by common names. Ensures Precise Communication: Essential in research, medicine, and conservation. Supports Biodiversity Studies: Helps scientists track and document species accurately. Avoids Naming Conflicts: Prevents duplication and inconsistency in taxonomy. Maintains Scientific Tradition: Preserves the legacy of early naturalists. Pro Tip: If you struggle with remembering scientific names, break them into parts. The genus often describes the broader family, while the species name highlights a specific characteristic. Learning Latin prefixes and suffixes can also help you understand meanings more easily. Scientific NameCommon NameCategoryHomo sapiensHumanMammalCanis lupusWolfMammalRosa indicaIndian RosePlantNature speaks a universal language, and Latin ensures we all understand it.Latin remains the foundation of scientific classification, providing a universal, stable, and precise way to name species. By using Latin, researchers across the world can communicate without linguistic barriers, ensuring clarity in taxonomy. The structured binomial nomenclature system prevents duplication and maintains order in biological studies. Without Latin, scientific research would be chaotic, leading to misinterpretations and errors. Understanding the importance of Latin in taxonomy enhances our appreciation for the organized world of science. In more technical literature, an organism is typically referred to by its scientific name. In contrast with common names, a scientific name is the same in any language and provides a unique name for an organism such that two people can be sure that they are referring to the same organism. This is not so with common names, e.g., "bream" refers to one kind of fish in some parts of the country, but completely different fish in other parts of the country. Following is an introduction to scientific names. Because many scientific names are constructed from Latin or Greek roots, you may find this guide to root words a useful tool for understanding scientific names.With so many species on this planet, it is essential to have a way to keep track of all of them, hence scientific names. As some of you may recall from a biology course, it was Carl Linnaeus who gave us our current system of binomial nomenclature. While you may curse it at times, consider what it replaced, namely a system where one species might have a name consisting of a single word, while another might bear a whole phrase as its name, something along the lines of the fish with little yellow spots on a blue body, except in Latin. The old approach was haphazard and cumbersome, and so Linnaeus sought to clean it up. Every species would get a name consisting of two words: the first word was the genus, and the second word was a specific epithet, and that couplet would together uniquely identify the species. This approach reflected the idea of hierarchical structure, namely that a family consisted of potentially a number of genera, and so each of these was to be named, and that a genus consisted of potentially a number of species and so the specific epithet would narrow the identification down to just one species within that genus. So the problem was solved. Getting to the roots But wait, two simple words do not provide a lot of flexibility nor descriptive power, and there are so many organisms on this planet (10 million plus and counting). So, simple words would not do the trick; instead each word tended to be a compound structure composed of one, two or more combining forms, called roots. A typical root is micro-, meaning small. There are many roots that describe sizes and/or shapes of attributes or characters. The eye is a typical fish character and the root opthalm is a Greek root meaning eye. By combining micro with opthalm we get micropthalmus which means small eye, and is a rather nice description of a particular cichlid from Central America, i.e., Theraps micropthalmus, which appears to have an unusually small eye compared to similar species. While it can be difficult to master so many fish names, it is much easier to master a list of roots and then recognize how longer words are put together. In fact, you probably already know lots of roots and use them from time to time without really appreciating their origin. This is particularly common when dealing with aches and pains and other medical conditions. For example, once you know that arthritis is inflammation (-itis) of the joints (arthr-), then bronchitis is simply inflammation of the bronchii (lungs), and laryngitis is inflammation of the larynx (voicebox). Add to this the knowledge that -pod means legs and it is an easy next step to see that arthropod means jointed legs. A quick look at a lobster reveals that it fits nicely into the category of arthropods, a group of animals characterized by their many jointed legs. By building up a mental network of combining forms (or roots), a person can understand a huge amount of scientific and medical terminology and still have some brain-space left over for other subjects. Where do these roots come from? Some of these roots derive from ancient Latin or Greek and some from other languages (increasingly so in the scientific names of organisms). Latin derived from Greek and Greek derived from the earlier Phoenician language. Because of these multiple ancient and confusing origins there are sometimes alternative ways of saying essentially the same thing, e.g., nephric and renal both mean "pertaining to the kidney" but the first is Greek and the second is Latin. Other roots are modifications of the names of people, places, or worse yet, other things (see below). Because of the diverse origins of these words, while many biologists will speak of the "Latin name" of an organism, it is more appropriate to speak of the scientific name of an organism, rather than its Latin name. The science of names The science of naming biological things is called taxonomy. Taxonomy is far from simple. In fact, there is an entire, very complicated, book devoted to all the rules that must be followed when giving an organism a name. It is called the International Code of Zoological Nomenclature. It is revised periodically and the latest edition, the Fourth, was published in 1999. The book reads much like a lengthy legal document, detailing all the possible cases and considerations. Keep a copy handy if you ever have trouble sleeping! As stated, the full name of a species is given as two words: its genus (always capitalized) followed by the specific epithet (never capitalized), e.g., Urusus americanus, the black bear. Although the use of italics in print means, by convention, that the italicized word is a Latin word, scientific names are traditionally printed in italics, regardless of whether the name is derived from Latin or not, e.g., Lepomis macrochirus is printed in italics even though the specific epithet, macrochirus -- meaning large hand -- is derived from Greek. Scientific names have traditionally been based on Latin or Greek roots, although more recently, roots from other names are allowed and being used, e.g., Oncorhynchus kisutch. The root Onco is Latin for hooked and rhynchus is Latin for beak, i.e., hooked beak. kisutch is a Russian word. Oncorhynchus is the generic name for Pacific salmonids, and is very appropriate, given the hooked beaks Pacific salmonids have when breeding. Oncorhynchus kisutch refers to the coho salmon which is found on both sides of the Pacific Ocean, in North America and in Russia. The Endings Because the root may have a gender associated with it, the specific epithet is supposed to agree with the gender of the root (where possible). This may cause the specific epithet to change if an organism is moved from one genera to another. So for example, the convict cichlid (one of my favorite study animals) used to be called Cichlasoma nigrofasciatum. But, when the species was moved to the genus Archocentrus, the specific epithet had to change to nigrofasciatus, so the fish is now called Archocentrus nigrofasciatus. Notice the change from um to us on the end of nigrofasciatus. This change is really important because some people may not realize that nigrofasciatus and nigrofasciatum are the same animal. Caveats An ideal scientific name helps the reader know something about the organism being discussed, e.g., the specific epithet, leptocephalus tells you that the animal has a slender (lepto-) head (-cephalus). Other scientific names incorporate a person's name, a location or some other combination of letters. If you are unfamiliar with the name it can be frustrating to try to interpret these names if you do not recognize that they are not traditional Latin or Greek roots. For example, Pseudotropheus barlowi is the name for a golden yellow fish found in East Africa; however, barlowi does not mean yellow. Rather, it pays homage to George Barlow, a famous ichthyologist and former PCCA member who spent much of his career trying to understand the prominent gold color found in some fishes. Similarly, Bufo californicus (the Arroyo toad) comes from California. The specific epithet of Tomocichla asfrasci, a beautiful fish from Panama, is actually an acronym for the Association of French Cichlid Aquarists, the group that sponsored the research that discovered the fish. Such names are discouraged but nonetheless they do exist. Sometimes names are not terribly appropriate. This may occur when the person describing an animal (i.e., writing the formal description) is not all that familiar with the animal in life. The describer may be working solely from preserved specimens. For example, in the name of the fish Archocentrus septemfasciatus, the specific epithet means seven striped. Unfortunately, the animal involved only shows its seven stripes very, very rarely, namely when it is highly stressed, as it might well be when dropped into formalin! The rest of the time, this fish typically shows no stripes at all, and when it is breeding it shows three spots. Perhaps a better name would have been Archocentrus trimaculatus, however, once an animal is named, provided the rules have been followed, the name sticks and cannot be changed just because the name is not appropriate. One of my favorites is Labidochromis coeruleus. The specific epithet means blue, but the fish is a bright, golden yellow. Oops! Similarly, Hypomesus transpacificus (the Delta smelt) suggests a fish found across the Pacific, i.e., on both sides of the Pacific ocean. Unfortunately, the name was given before it was recognized that the smelt found in Asia is completely different from (and only distantly related to) the Delta smelt which, in contrast to its grandiose name, is found only in the upper estuary of San Francisco Bay, a very restricted habitat indeed. The bottom line is that scientific names are often useful, but they can also be misleading. Making scientific names The simplest way to make a name out of a root is to add the suffix "a", "us" or "um" to the end of the root (depending on the gender), e.g., for a spotted animal, use maculata, maculatus or maculatum. Often, however, one root is not enough to clearly identify the organism and you want to elaborate. So, you might combine two roots, e.g., eight spotted, becomes octomaculatus. This combines the root oct- with the root maculat- and the suffix us. To put the roots together we add an "o" in between (other times we might use an "a" or an "I" depending on the root). The "o" or "I" is called the combining vowel. Note that there are other possible suffices besides "a", "us" and "um"; these are the ones you will see most often in scientific names. When you are combining these parts together, we try not to mix languages within a word. For example, we say hepatic meaning "pertaining to the liver", not hepatal. The root hepat/o is Greek and the suffix meaning "pertaining to" in Greek is -ic. While the suffix -al also means "pertaining to", it is Latin. It gets harder if there are both Greek and Latin roots for the same structure, e.g., nephr/o is Greek while ren/o is latin. So we would say renal but never renic and we would say nephric but never nephral. Besides suffixes, roots and combining vowels, you may see prefixes. A commonly used prefix is a, meaning "without", as in asexual which means "without sex". Just to mess with you -- actually it is more a matter of easing pronunciation -- some prefixes change when placed in front of certain letters. This is called assimilation. For example, the prefix syn (= fused or together) when added to the root -pathy (= suffering) becomes sympathy not synpathy. Perhaps most intriguing is the word assimilation which is created by combining ad and similation, and is in fact an example of assimilation, i.e., it is NOT written adsimilation. Scientific names at higher taxonomic levels There are fewer rules for names at higher taxonomic levels, largely because these names do not really mean much. However, there are a few conventions. For example, the names of biological families of animals always end in idae, e.g., Cichlidae is the name of the family containing the cichlid fishes. Notice that the family name is capitalized, but not italicized. You may refer to the members of the family by removing the "ae" and adding "s" and not capitalizing, e.g., cichlids are wonderful aquarium fishes. inae subfamily, e.g., Cichlasominae idae family, Cichlidae oidea suborder, e.g., Labroidea iformes order, e.g., Perciformes Pronunciation I do not think it matters exactly how you pronounce these words. In fact, I think it is difficult to argue that there is a correct pronunciation for words formed from the composite of various languages, some of which are no longer spoken. For example, Oncorhynchus kisutch is a combination of Latin and Russian and it seems unnecessary to switch accents halfway through the name. Far more important than the exact pronunciation is that you annunciate all the parts such that a listener has some hope of understanding the roots. Too often, beginners, when confronted with a lengthy scientific word, speed through it in hopes that if it is said quickly, any mispronunciations will not be noticed. However, in speeding through, the hasty orator often leaves out or alters some of the roots, thereby changing the meaning of the word. For example, antilocapra means "antelope goat" (antilo- = antelope; -capra = goat). If you say the word too quickly and drop the lo part, it sounds like anticapra which would be "opposite of goat". The species Antilocapra americana is the Pronghorn which indeed does look like a cross between an antelope and a goat found in western North America and so it is important to pronounce all the syllables. Because of this danger, I appreciate when people say scientific names slowly and clearly, annunciating each part. That said, there are conventional ways of pronouncing these words, often learned by hearing a mentor. Once learned, it is difficult to change one's pronunciation of a particular word. Micropterus punctulatus (the spotted bass, a kind of sunfish native to the central United States but now found in California) is pronounced by some as Microp-terus. This is fine but it may confuse the listener because the roots that make up the word are micro- and -pterus which literally mean "small-wing". The p in terus is silent. There is no Latin root microp-. I prefer to pronounce each root, i.e., Micro-pterus, so that the origins and meaning of the word are clear. Resources To learn more about Latin and Greek roots and scientific names, there are numerous books on those topics. One little book that I find particularly useful is a classic little pocketbook by D.J. Borror, Borror, D.J. (1988) Dictionary of Word Roots and Combining Forms. Mayfield Publishing, Mountainview, California. 134pp. It costs around $11 and simply lists hundreds of Greek and Latin roots and their associated meanings.Latin and Greek are used to classify organisms because they are considered "dead" languages, meaning they are no longer evolving and thus provide stable and consistent scientific terminology. Additionally, many scientific terms and names of species were established using Latin and Greek roots by early naturalists, making it easier to maintain consistency and clarity in biological classification.Scientific names of all living creatures are in Latin.Occasionally a Greek word will be used, or a "latinized" word willbe created if none exists. An example of this is the scientificname for a particular owl mite, named "Strigophilus garylarsonii,''apparently named after the creator of the "Far Side" comic strip,Gary Larson. The scientific name consists of the genus and species,the last two categories in the taxonomical classification of theliving organism in question.The scientific names are typed in italics by convention so as to distinguish these names from other text or normal text. This rule in followed in binomial nomenclature given by Linnaeus. Scientific names are informative Every recognized species on earth (at least in theory) is given a two-part scientific name. This system is called binomial nomenclature. These names are important because they allow people throughout the world to communicate unambiguously about animal species. Scientific names have traditionally been based on Latin or Greek roots, although more recently, roots from other names are allowed and being used, e.g., Oncorhynchus kisutch. The root Onco is Latin for hooked and rhynchus is Latin for beak, i.e., hooked beak. kisutch is a Russian word. We know ptero- means wing, so what is the -dactyl portion of the word? It comes from the Greek dktylos, meaning finger. So, pterodactyl literally means winged finger. We use Latin, and sometimes ancient Greek, as the basis for a universal scientific language, and occasionally, words from other languages. We use these dead languages because the word meanings dont change the way they sometimes do in English and other modern languages. Scientific names are used to describe various species of organisms in a way that is universal so that scientists around the globe can readily identify the same animal. This is called binomial nomenclature, and many of the scientific names are derived from the Latin name of the organism. The 10 Greatest Scientists of All TimeAlbert Einstein (Credit: Mark Marturello)Marie Curie (Credit: Mark Marturello)Isaac Newton (Credit: Mark Marturello)Charles Darwin (Credit: Mark Marturello)Nikola Tesla (Credit: Mark Marturello)Galileo Galilei (Credit: Mark Marturello)Ada Lovelace (Credit: Mark Marturello) In the current science of classifying organisms the highest rank of classification is domain. Domain is a taxon. Note: Species is a unit of classification and hence a taxon. A virus is not a species; a virus belongs to a species. Italicize species, genus, and family of a virus when used in a taxonomic sense. Note however, that it is fine to not mention taxonomy of a virus, especially one like dengue or polio that is well known. Do not italicize a virus name when used generically. 1. Scientific names are always italicized. When hand-writing text, you can underline them instead, but there is no excuse not to italicize when using a word processor. Example: use Bos taurus, not Bos taurus. According to the Oxford English Dictionary, the word syllabus derives from modern Latin syllabus list, in turn from a misreading of the Greek sittybos (the leather parchment label that gave the title and contents of a document), which first occurred in a 15th-century print of Ciceros letters to Atticus. Biologists use these categories to classify organisms, usually with Latin names like Canis familiaris, or domestic dog. In Middle English, species meant a classification in logic, borrowed from the Latin word meaning kind or appearance, from the root of specere, to see. Albert Einstein called Galileo the father of modern science. Galileo Galilei was born on February 15, 1564, in Pisa, Italy but lived in Florence, Italy for most of his childhood. His father was Vincenzo Galilei, an accomplished Florentine mathematician, and musician. A name used by scientists, especially the taxonomic name of an organism that consists of the genus and species. Scientific names usually come from Latin or Greek. An example is Homo sapiens, the scientific name for humans. 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. A genus (plural genera) is a group of related species. A family is a group of related genera. No two species of animals may have the same species name. No one species of animal may have more than one valid species name. The scientific name of an animal species is intended to be unique, to be used worldwide by biologists and others, no matter what language they speak. Taxonomy. The binomial name Homo sapiens was coined by Carl Linnaeus (1758). Names for other human species were introduced beginning in the second half of the 19th century (Homo neanderthalensis 1864, Homo erectus 1892). snake, (suborder Serpentes), also called serpent, any of more than 3,400 species of reptiles distinguished by their limbless condition and greatly elongated body and tail. Humans and monkeys are both primates. But humans are not descended from monkeys or any other primate living today. We do share a common ape ancestor with chimpanzees. But humans and chimpanzees evolved differently from that same ancestor. Latin was the lingua franca of scientific work in the West during the Middle Ages, so Western scientists used Latin for naming species of organisms. During the 18th century Swedish naturalist Carolus Linnaeus simplified this practice by creating binomial nomenclature, whereby an organism is identified by genus and species names, both of which are Latinized words. Home Biology Scientific nomenclature refers to various names according to a specific field of study.Usually, animals & plants are identified by common and scientific names. Scientific Name The binomial name consists of a genus name and a specific epithet. Internationally recognized standards govern the format for writing scientific names of animals and plants. Swedish botanist Carl Linnaeus established the protocol for naming species and created the system of binomial nomenclature. He first employed this system in his bookSpecies Plantarumwhich was published in the year 1753.Taxonomists have established several codes for scientific nomenclature. These codes are universal and are periodically updated by consensus. Scientists in the mid-1800s agreed upon an expanded nomenclature system. The following codes are used today: International Code of Nomenclature foralgae, fungi, and plants International Code ofZoological Nomenclature International Code of Nomenclature ofProkaryotes International Code of Nomenclature forCultivated Plants International Code ofPhytosociological Nomenclature International Committee on Taxonomy of Viruses It is the set of guidelines and recommendations that control the scientific naming of all organisms previously categorized as algae, fungi, or plants, whether they are fossil or non-fossil. This includes blue-green algae (Cyanobacteria), chytrids, oomycetes, slime molds, and photosynthetic protists along with their taxonomically related non-photosynthetic groups (but excluding Microsporidia). The ICZN produces and disseminates information on how to correctly use the scientific names of animals, serving as an advisor and arbiter for the zoological community. The International Code of Zoological Nomenclature, a set of guidelines for animal naming and the solution of nomenclatural issues, is established by the ICZN. Prokaryotes, comprising eubacteria and archaebacteria or archaea, are classified according to the International Committee on Systematics of Prokaryotes (ICSP) and the International Code of Nomenclature of Bacteria. The ICNCP is a manual for naming cultigens, or plants whose origin or selection is primarily attributable to deliberate human action. Grexes, Groupings (cultivar groups), and Cultigens all fall under the scope of the ICNCP. It includes all species that are typically classified as plants, including fungi and alga. Taxa that are given names under the ICNCP will also be included in the taxa named under the International Code of Nomenclature for Algae, Fungi, and Plants. It consists of definitions, principles, articles, recommendations, and a guide to the correct formation of names of syntax based on the names of plant species. ICTV is a committee of the Virology Division of the International Union of Microbiological Societies. The Statutes define the objectives of the ICTV are: Develop an internationally agreed taxonomy for viruses and other mobile genetic elements (MGEs) that are part of the virosphere. Develop internationally agreed names for virus taxa. Communicate taxonomic decisions to the international community of virologists. Maintain an Index of agreed names of virus taxa. The levels from highest to lowest classification are as follows: DomainKingdomPhylumClassOrderFamilyGenusSpecies Scientific names arealwaysitalicized. In hand-written texts, it can be underlined instead, however when using a Word processor, there is no justification for not italicizing. Example: Bos taurus, notBos taurus. The genus isalwayscapitalized, even when occurred in the middle of the sentence. Example: Antibiotic resistance observed in Escherchia coli. The species isnevercapitalized, even when it refers to the name of a place or person. Example:Juniperus virginiana, notJuniperus Virginia. The subspecies is always formatted in the same way as the species; lowercase and italicized. If the subspecies name is the same as the species name (e.g., the tigerPanthera tigris tigris), the species can be abbreviated to the first letter (Panthera t. tigris). If a species is unknown, the abbreviation sp. is used in place of the species name and is non-italicized. The abbreviation spp. is similarly used to indicate a group of unknown species. The term sp. novo is used to indicate a species that is being described for the first time. The genus is always written in full when it is used for the first time within a specific document. The first initial and a period can be used to shorten the genus in subsequent uses. Example: Escherichia coli is a lactose fermenting Gram-negative bacteria. The cases of antibiotic resistance E. colihas been reportedfrequently. If two species from different genera have the same abbreviation for their genus, the full genus should be written to avoid confusion. Example: Staphylococcus aureus and Streptococcus pyogenes instead of S. aureus and S. pyogenes. A species name is never used without a genus or genus abbreviation. Example: Tribolium confusumorT. confusumbut never justconfusum. Genus by itself can be used to refer to multiple species within the genus. Example: There are many species ofDrosophilathat are affected by exposure to alcohol. If a common name is used, it is first defined in terms of its scientific name. Example: Pan troglodytes(chimpanzee) The initials or full name of the scientist who named or discovered the species may appear after the scientific name in some cases. The scientist or the individuals name is not to be italicized. Example: Juncus inflexus L.. Carolus Linnaeus, an eminent scientist whose name was Latinized, was abbreviated to L The name of the pants at the end generally ends with the plural adjective which in Latin is aceae. The adjective used generally describes the genus or the family characteristics to which the particular plant belongs. Some of the Scientific names of common plants are as given below: Common NameScientific NameApplePyrus malusBambooBamboosa aridinarifoliaBrinjalSolanum melongenaBananaMusa paradisiacaBlack GramVigna mungoBanyanFicus benghalensisBarleyHordeum vulgare The system of naming the animals is similar to that of the plants naming system. During the nomenclature of the animals, the genus comes first and then is followed by the species. Binomial Nomenclature of Tiger. Some of the scientific names of animals are as follows: Common NameScientific NameDogCanis familiarisCatFelis catusHorseEquus ferus caballusSheepOvis ariesDomestic PigSus scrofa domesticusWild GoatCapra aegagrus hircusAsian ElephantElephas maximus Phylogenetic and evolutionary research has helped to connect the relationship of extinct animals with the surviving organisms, and its nomenclature is similar to the other organisms. Some of the lists of the scientific names of extinct animals are as follows: Common NameScientific NamePassenger pigeonEctopistes migratoriusTasmanian tigerThylacinus cynocephalusMoaDinornithiformesT-RexTyrannosaurus rexDolphinLipotes vexillifer Common names, in contrast to scientific names, are not exclusive. Therefore, using common names can cause misunderstandings regarding the animal being referred to and its relationships to other animals. Example: Badgers Although they are all called badgers and they are all members of the same mammalian family, they are not each others closest relatives. There are various animals worldwide that are superficially similar. Honey badgers(Mellivora capensis) North American badgers(Taxidea taxus) Eurasian badgers(Meles meles) Stink badgers(Mydaus javanensis) Ferret badgers(Melogale personata) Eliminates confusion between nationalities that may have different common names for organisms by assigning them a universal name that acts as a code. Enago Academy. (2021). How to Write Scientific Names of Plant and Animal Species in Journal Manuscripts (Part 1). Accessed from: International Code of Nomenclature for algae, fungi, and plants. (2017). Introductory Pages. Accessed from: International Commission on Zoological Nomenclature. (2022). Welcome to the ICZN. Accessed from: International Committee on Systematics of Prokaryotes (ICSP). (2022). Code of Nomenclature. Accessed from: Myers, P., R. Espinosa, C. S. Parr, T. Jones, G. S. Hammond, and T. A. Dewey. 2022. The Animal Diversity Web (online). Accessed from: Ruten D. (2022). How to Write Scientific Names. Accessed from: The International Code of Virus Classification and Nomenclature (ICVCN). (2021). Statutory Basis for the International Committee on Taxonomy of Viruses. Accessed from: Vanderbilt University. (2020). Scientific Name. Accessed from: Weber, H. & Moravec, J. & Theurillat, Jean-Paul. (2000). International Code of Phytosociological Nomenclature. Journal of Vegetation Science. 11. 739 768. 10.2307/3236580. About Author One of the most frustrating aspects for new gardeners is the use of scientific or botanical plant names. Believe it or not, botanical names were created by Carolus Linnaeus to make plant names easier. Before Linnaeus created the binomial (bi = two and nom = name) system in the 1700s, each plant had several names.Why Latin? | Why are Scientific Names Used? | How Plant Names are Structured | How to Write a Plant Name | More Information Carolus Linnaeus (1) Why Latin?Scientific names are Latin or Latinized versions of words. Latin was chosen because it is a "dead" language, meaning word meanings remain unchanged over time. This is important since many Latin names describe an attribute of the plant and it would be difficult if the meaning changed. This stability, combined with many 18th-century European scientists already being familiar with Latin, made it an ideal choice for a universal naming system. Linnaeus, who developed this system, was so fond of Latin that he Latinized his own name to Carolus Linnaeus, from Carl Von Linne.Why Do We Prefer Scientific Names? Scientific or botanical names eliminate confusion that can be found when using common names (2) The best reason for not using common names when referring to plants is that they are often more confusing than the botanical name.The Same Plant Can Have More Than One Common NameCommon names can vary by location and are in the speaker's native language. This means that the same plant may have more than one common name. For example, the linden tree (Tilia) is also known as basswood, lime tree, and bee tree. One Common Name Can Refer to More than One PlantThere are also several common names that are used for more than one species of plant. The common name, lime tree, can be used to describe the citrus fruit tree (Citrus limetta) or the shade tree (Tilia cordata) - two very different plants. Scientific names are used in all parts of the world, regardless of the native language. Common names are in the native language as seen on these Thai and Russian plant signs. (3)(4) Scientific Name Elminates ConfusionWith all this variation in common names, using a universal binomial naming system eliminates any confusion. The scientific name applies to only one species and is used in all parts of the world regardless of the language spoken.In some cases we get lucky and the widely used common name is also the scientific name of the plant. This is true for plants like Hosta, Viburnum, Forsythia, Ginkgo, or Begonia. In other cases, common names may have once matched the genus name but are then changed. Scientific names not only provide a universal name, but they also indicate how plants are related to each other. However, after being named, occasionally, a plant is studied more carefully and botanists learn that they are actually not as closely related as once thought and must be renamed to more accurately show their relation to other plants. In some of these cases the scientific name changes, but the common name (once aligned with the scientific name) does not. For example, sansevieria is now classified as Dracaena and the asters native to North America are now known as Symphyotrichum.How Plant Names are StructuredSpecies NameThe scientific names of plants are comprised of the genus and the specific epithet. Together, the genus and specific epithet make up a species name for a plant.This binomial naming system is similar to an individual's name. Our last name identifies us to a particular group (family) like Darwin, Lincoln, or Kusama. The Genera (plural for Genus) of Acer, Quercus, and Salvia do the same for plants. Our first name identifies us specifically, such as Charles, Abraham, or Yoyoi. The specific epithets rubrum, alba, or splendens do the same. Put these two words together, and you have the name of a specific individual (Charles Darwin, Abraham Lincoln, or Yayoi Kusama) or a specific plant species (Acer rubrum, Quercus alba, or Salvia splendens). Scientific names are comprised of a genus and specific epithet. (5) HybridsSome garden plants are the result of the crossing of two different species. For example, silver maple (Acer saccharinum) can be crossed with red maple (Acer rubrum) to get a hybrid. These hybrids are often given a new specific epithet name and a multiplication symbol proceeds it to indicate that it is a hybrid (Acer saccharinum rubrum = Acer freemanii, the Freeman maple).Cultivars and VarietiesMany garden plants are further identified with a variety or cultivar name. Varieties often occur in nature and most are true to type. That means the seedlings grown from a variety will have the same unique characteristics as the parent plant. Cultivar means "cultivated variety" and is a plant that is selected and cultivated by humans. Cultivars can result from sports or mutations, hybrids, and other types of selective breeding and are not necessarily true to type. Cultivars are often named for people or places, typically in the native language of the breeder. Cultivar names can describe the most significant trait of the plant and are often selected to be memorable or marketable.Learn more in this article: What is the difference between a cultivar and a variety? Cultivar names are typically in the native language of the breeder. (6) Patented & Trademarked NamesCultivars are sometimes patented or trademarked to protect the breeders' rights. This provides legal protection around the name. Patents can be granted for up to twenty years and give the breeder exclusive rights to propagate and sell that particular cultivar allowing them the opportunity to make money from their plant selection.Trademarks are used to prevent the name from being used for any other similar plant. This keeps others from marketing or selling the plant using that name and allows the breeder to make more revenue from their plant selection. These names are identified by the use of trademark () or registered trademark () designations.Trademarked names cannot be the same as the cultivar name. A cultivar name is considered descriptive of the plant. A trademark name is considered a "brand name." If the trademark name is used as the cultivar name, the name becomes generic and loses its trademark status. For this reason, a trademarked plant will have two names: its trademark name (often memorable, catchy, or descriptive) and its cultivar name (often nonsensical, making it rarely used in commerce). For example, a narrow-growing ginkgo cultivar is trademarked as Princeton Sentry, but its cultivar name is 'PNI 2720.' Occasionally trademarked names are written erroneously as the cultivar name (for example, Ginkgo biloba 'Princeton Sentry'). This is an incorrect way to refer to a trademarked plant. Trademarked names cannot be the same as the cultivar name. (7) AuthorityIn scientific papers, the scientific name for a species will also include a name or abbreviation after the specific epithet that refers to the person who named the plant. Some prolific botanists will have an abbreviation. For example, in the name Acer rubrum L., the "L" stands for Linnaeus, and in Acer miyabei Maxim., the "Maxim." stands for Karl Maximovich. For other scientific names, the authority may simply be their entire name, without an abbreviation (for example, Acer freemanii A.E. Murray).Gardeners rarely have a need to know the authority and so frequently, this information is not included in references and resources intended for gardeners.How to Write a Plant Name Plant names have standards that are followed when writing them. (8) Scientific names have some standards to follow when writing them. Species NamesThe genus name is always capitalized and the specific epithet is lowercase. The binomial name is italicized (or underlined when handwritten) (e.g., Panicum virgatum). When the specific epithet is not known or not needed, the genus name is followed by "sp." or "spp." which is not italicized. (e.g., Hosta sp.) If you are referring to several species in the same genus, the genus name can be shortened to just an initial followed by a period for subsequent species names after the full genus name was written once (e.g., Rosa arkansana, R. blanda, and R. carolina).The authority, if indicated, is after the binomial name and is not italicized or underlined.HybridsIntergeneric hybrids (those between two species in the same genus) are indicated with a multiplication symbol () between the two specific epithets or before the hybrid name (e.g., Quercus alba robur; Quercus bimundorum).The multiplication symbol is often substituted with a lowercase "x" for ease, even though the multiplication symbol is more appropriate.Varieties & CultivarsVariety names are also italicized, lowercase, and are preceded by "var." (e.g., Gleditsia triacanthos var. inermis)Cultivar names come after the full scientific name (genus, specific epithet, and variety). They are surrounded by single quotes, not italicized, and may or may not be capitalized. Alternatively, cultivars can be written without the single quotes and preceded by "cv." (e.g., Syringa vulgaris 'Sensation'; Salvia officinalis cv. Tricolor; Gleditsia triacanthos var. inermis 'Sunburst')Trademarked NamesTrademarked names are not part of the scientific name and, therefore, should not be written as such. They are typically written with the common name or after the scientific name and always with the proper designation ( or ).Common NamesWhen writing a common name in English, there are a few things to remember. Common names, in general, are written in lowercase (e.g., marigold, red oak). If the common name includes a proper noun, that word should be capitalized (e.g., English oak, Allegany spurge). When the common name is the same as the genus name, it is typically lowercase when used as a common name (e.g., iris, hosta). All of this said, we often see capitalized common names, especially when we write them on signage or in lists. We do this for the same reason we capitalize "Mustard" on the sign advertising a sale in the grocery store or "Milk" and "Ketchup" when we put them on our grocery list - it looks better or is easier to read. So, cut someone some slack if they capitalize a common name, they are almost always capitalized on the garden center signs! How to Write a Scientific Name More InformationPhoto credits: 1: Juulijs/AdobeStock; 2: Aaron Steil; 3: cocorattanakorn/AdobeStock; 4: Helen Pitt/AdobeStock; 5: Aaron Steil; 6: Helen Pitt/AdobeStock; 7: Aaron Steil; 8: Aaron Steil A 'dead' language was needed, so that there could be no doubtabout the names - there are pet names and official names foranimals in most languages, so it can be hard to get a goodtranslation from one modern language into several other modernlanguages. Latin was the chosen dead language because it was and isquite well known by educated people in Europe, which was the basefor scientific development at the time.Star names usually come from Greek, Latin, Arabic, or scientific catalog designations. These names are often based on the star's constellation or position in the sky.Scientific names use Latin because it is a dead language, meaning it is no longer evolving and changing. This stability ensures that the scientific names remain consistent and universally understood by scientists around the world. Written by: Daniel Ruten "The beginning of wisdom is to call things by their proper name." Confucius Table of contents How to write scientific names How to format scientific names Understanding the rules for writing a scientific name Precise terminology is vital in scientific writing. Therefore, the current system of taxonomy ensures that authors use standard scientific terms. While naming and categorizing plants and animals has been a common human practice for thousands of years, early attempts were not systematic, so they were sometimes a bit flawed. For instance, in Ancient Greece, Plato was renowned at one point for his definition of a man as a "featherless biped." His fellow philosopher Diogenes responded by bringing forth a plucked chicken and proclaiming it to be a man. The creation of a universal system of scientific names is relatively recent, starting in the eighteenth century with the foundational work of naturalists such as Carl Linnaeus. The modern system of taxonomy ensures that, no matter a person's spoken language, they can be confident that they are referring to the exact same species or taxa as other scientists. This standard framework underpins the entire body of scientific research that seeks to understand the living things in our world and how they relate to each other. Accordingly, learning and following the rules for writing a scientific name is essential for any scientific work. This post will provide a brief overview of the taxonomic system of living organisms and how to write the scientific name of any plant or animal. How to write scientific names The basics: What is binomial nomenclature? The system of binomial nomenclature was first developed by Linnaeus and is still used today. In it, each individual species of organism is given a Latin name consisting of two key elements: the genus and the species, in that order. However, it is important to note that a scientific name can also contain a subspecies if additional information is necessary to correctly identify a specific animal. All scientific names are standardized by international codes. Example: What is the scientific name of a cat? For instance, the scientific name of the domestic housecat is Felis catus (note that because scientific names are in Latin, they are always italicized when written, and the first word is always capitalized). In this case, Felis denotes the genus and catus denotes the species. Together, these two pieces create the scientific name of a domestic cat. To better understand the significance of these categories and how this furry little carnivore fits into the natural order of things, lets briefly review the hierarchy of all seven classification levels of the domestic cat. Classifying the domestic cat: All seven classification levels While these classifications are useful and interesting, only genus, species, and (if applicable) subspecies are necessary to create a standard binomial scientific name. Kingdom:Animaliathis category encompasses all animals. Phylum:Chordata (subphylum Vertebrata)this category includes all animals that have chordates or backbones. Class:Mammaliathis category includes all mammals (i.e., animals that have hair, three middle-ear bones, and mammary glands). Order:Carnivoraas you can probably guess from the name, this category includes all carnivores. Family:Felidaethis category encompasses both wild and domestic cats. Genus:Felisthis category encompasses cats that are smaller and/or cannot roar. Species:Catushere, weve finally arrived at the particular brand of small cat that has become a friend (or master) of humans. This species includes between 40 and 50 breeds of cats. Example: What is the scientific name of a dog? Likewise, the scientific name for the domestic dog is Canis lupus familiaris. In this case, Canis denotes the genus;lupus, the species;and familiaris, the subspecies. Your friendly neighborhood Pomeranian is considered a subspecies of Canis lupusthe gray wolf! How to format scientific names in academic writing Italicization Publications and style guides may vary. However, the scientific name of any species of plants or animals should almost always be italicized. Capitalization In addition, the genus (the first component of the name) should always be capitalized, while the species and subspecies are kept in lowercase. Categories above genus As mentioned, binomial scientific names should always be italicized, but any category above the level of genus is typically written in roman (i.e., non-italicized) text. The exceptions are bacteria, fungi, and viruses; for these taxa, italics are also used at the family level. Multiple appearances Additionally, when writing a scientific name multiple times in a text, the genus is often abbreviated to include only the first letter after the first use of the name. For instance, one may write: "Felis catus belongs to the order Carnivora. This means that F. catus subsists primarily on meat." Subspecies The subspecies is always formatted in the same way as the specieslowercase and italicized. If the subspecies name is the same as the species name (e.g., the tiger Panthera tigris tigris), the species can be abbreviated to the first letter (Panthera t. tigris). Unknown species If a species is unknown, the abbreviation "sp." is used in place of the species name and is non-italicized. The abbreviation "spp." is similarly used to indicate a group of unknown species. The term "sp. novo" is used to indicate a species that is being described for the first time. Discoverers' names Sometimes, the abbreviated or full surname of the person who named the species is included after the scientific name (e.g., "Quercus alba L." or "Quercus alba Linnaeus"). This part of the scientific name is never italicized. Parting advice: Ensuring consistency Lastly, make sure that you use and format scientific names consistently throughout your paper, article, or thesis. When working on a sizable document, making sure that scientific terms are consistently written and formatted throughout can be a labor-intensive and time-consuming task. That's why it's always helpful to get a second set of eyes on your work before submitting your final draft. You can ask a friend or colleague to look over your work or use a professional editor. With that, you can rest easy in the knowledge that your reader will easily understand and appreciate your work without being put off by any errors or inconsistencies. Image source: Rawpixel/elements.envato.com Daniel Ruten is an in-house editor at Scribendi. He honed his academic writing and editing skills while attaining a BA and MA in History at the University of Saskatchewan, where he researched institutions and the experiences of mental patients in 18th-century England. In his spare time, he enjoys producing music, reading books, drinking too much coffee, and wandering around nature.

**What language are most scientific names written in. What language are scientific names typically written in. What language are botanical scientific names written in. What language is used for scientific names. The scientific names of organisms are usually written in what language. What language are scientific names written in example human homo sapien. Scientific names are usually written in what language. All scientific names are written in what language.**