

FUNDAMENTALS OF MODERN BIOLOGICAL TERMINOLOGIES AND NOMENCLATURES

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ABSTRACT

Understanding the principles of compiling terms of biological nomenclature and being able to use Latin terminology is an important part of the professional training of every biologist. In biology, Latin is still the only international official language. Latin and Greek are the building blocks with which new botanical and zoological terms are created.

Keywords: Latin language, scientific name, biological terminology, zoology, botany, mycology, microbiology

INTRODUCTION

The Latin language (*lingua Latina*) is one of the oldest languages in the world. It was originally spoken by the Latin tribe, who inhabited a small region in the center of the Apennine peninsula *Latium*. After Greece became part of the Roman Empire, a large number of both everyday Greek and scientific names from various fields of knowledge appeared in the Latin language. During the Renaissance, Latin continues to retain its function as the international language of science and education.

All humanist scientists of that time wrote their scientific works and conducted debates in Latin. It was during this era that favorable conditions were created for scientific research in zoology and botany, and the foundations of modern biological terminology and nomenclature were laid.

Biological nomenclature is a system of scientific names in Latin in botany, zoology, mycology and microbiology for groups of organisms related by varying degrees of relationship - *taxa*. Botanical, zoological and other nomenclatures are developed by relevant international committees, then they are approved at international congresses and published international codes that have the force of legislative documents. There are also anatomical, biochemical and other nomenclatures. The foundations for the nomination of biological terminology and nomenclature were laid by the great Swedish scientist Carl Linnaeus. Currently, guidelines for the formation of Latin names for a particular taxonomic group are contained in the "International Code of Botanical Nomenclature", "International Code of Zoological Nomenclature", "International Code of Nomenclature of Bacteria". They note that all scientific names of flora and fauna must be Latin or Latinized in form, and also obey the rules of Latin grammar.

Structurally, the names of taxonomic categories (except for species and subspecies) are uninominal (i.e., one-word). For uninominal names in zoology, substantivized adjectives in the neuter plural form are often used (since the noun *animalia* is meant - animals). For example: *Odonata* (neg.) - dragonflies, *Zygoptera* (p/neg.) - homoptera dragonflies, *Anizoptera* (p/neg.) -

heteroptera dragonflies, Mammalia (cl.) - mammals, Theria (p/cl.) - true mammals , Insecta (cl.) – insects, Lepidozauria (p/cl.) – lepidosaurs.

Botanical uninominal names are most often substantivized adjectives in the feminine form (since the noun *plantae* is implied - plants). For example: Diatomeae (division) - diatoms, Centrophyceae (cl.) - centric algae, Nostocales (order) - nostoc algae.

To form these names, Greek, and less often Latin, term elements are used. Quite often, one-word names of taxonomic units of a rank higher than the genus have unified final term elements. For example:

-phyta – names of botanical departments: Cyanophyta – blue-green algae, Chlorophyta – green algae, Charophyta – charophyte algae, Bryophyta – mosses;

-phyceae – names of the class of algae: Protococcophyceae – protococcal, Charophyceae – charophytic, Siphonophyceae – siphonic;

-idae – names of subclasses in botany and -ida – names of orders in zoology: Bryidae – bry mosses, Trichomonadida – trichomonads, Euglenida – euglenoids;

-aceae, -ferae, -atae, -osae – names of plant families: Brassicaceae – brassicas, Cruciferae – cruciferous, Labiatae – Lamiaceae, Fabaceae – legumes, Umbelliferae – umbelliferae, Leguminosae – legumes.

However, not only substantivized adjectives, but also nouns can be used as a uninominal name. For example: Fungi - mushrooms, Vermes - worms, Aves - birds, etc.

A significant part of modern biological nomenclature consists of species names. To designate species of plants and animals in biology, a binary (i.e., consisting of two words) nomenclature is adopted.

The Latin name of a species consists of a generic and a specific name. The generic name is written with a capital letter, and the specific name with a lowercase letter.

A generic name is a noun or a substantivized adjective in the nominative singular, often artificially created on the model of Latin nouns. These nouns are based on both Latin and Greek lexemes. For example: *Bidens* - string, *Carduus* - thistle, *Rumex* - sorrel, *Avena* - oats, *Salix* - willow, *Hyoscyamus* - henbane, *Coregonus* - whitefish, *Tabanus* - horsefly.

The specific name is expressed by an agreed upon, less often inconsistent, definition. For example: *Malva silvestris* (according to the definition) - wood mallow, *Origanum vulgare* (according to the definition) - common oregano, *Mamestra pisi* (non-according to the definition) - pea cutworm (lit. pea cutworm).

Sometimes a species name can be expressed as a noun in the nominative case (i.e. as an appendix): *Panthera leo* – lion (lit. panther lion), *Calopteryx virgo* – beauty (lit. beauty girl), *Cygnus olor* – swan (lit. swan swan). When nominating species in zoology, the use of tautonyms is allowed, i.e. words that exactly repeat the generic name. For example: *Vimba vimba* - rybets (lit. rybets rybets), *Porzana porzana* - pogonysh (lit. pogonysh pogonysh), *Coturnix coturnix* - quail (lit. quail quail), *Alces alces* - elk (lit. elk elk).

The names of intraspecific categories (*varietas*, *subvarietas*, *forma*, *subforma*, *forma specialis*) are composite. They include a binomial species name and one or more subspecies names, separated by taxon rank designations. For example: *Raphanus sativus* *varietas radicula* – garden radish, a type of radish; *Curcubita pepo* *varietas patisson* - common pumpkin, a variety of squash.

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