

# SYSTEMATICS & EVOLUTION

## ZOOLOGICAL NOMENCLATURE

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# ZOOLOGICAL NOMENCLATURE

# PRINCIPLE OF PRIORITY

- According to this rule, the valid name of a taxon is the oldest available name applied to it, provided it conforms with the rules of nomenclature.
- The rule of priority is to promote stability of the names. The word 'Priority' actually denotes 'priority of publication'.
- When more than one correct name is available for a taxon, the valid name will be the earliest legitimate name in the same rank.

- The insect species *Epitranus erythrogaster* was described by Cameron in 1888 and the same species was described by several authors as follows:

*Epitranus erythrogaster* Cameron, 1888

*Anacryptus sculpturatus* Crawford, 1910

*Anacryptus kankauensis* Masi, 1933

*Arretoceroides ceylonensis* Mani, 1936

- Since Cameron's name *E. erythrogaster* is the earliest legitimate name, it is accepted as the valid name (senior synonym) and according to law of priority all others become its invalid names (junior synonyms).

- If two names for the same taxa is published simultaneously, the first reviser can select the better known name than the other one even if this one (the ,latter little known one) has line or page precedence (which is not priority).
- If a new name is spelled in more than one way in the original publication, the first reviser has to select the spelling which is most commonly used.

# HOMONOMY& SYNONOMY

- If more than one name is given to a taxon, all these names are known as synonyms.
- Among these synonyms, the first published valid name is the senior synonym and the subsequent ones are junior synonyms.
- There are two kinds of junior synonyms:-  
Objective and subjective

- one kind is based upon the same type. These are known as 'Objective synonyms'. They are always absolute. It is indicated by the use of mathematical sign of congruence
- The second kinds of synonyms are synonyms, only in the opinion of one or more workers of the group. They are known as 'Subjective synonyms'. They are not absolute and are represented by “=”

- *Example 1*

Senior synonym: *Dirhinus auratus* Ashmead, 1905.

Junior synonym: *Dirhinus cercinus* Husain & Agarwal, 1981. (Narendran synonymized, 1989).

- Homonym :
- Each of two or more available specific or subspecific names having the same spelling which were established for different nominal taxa (1 name = 2 or more taxa)
- The names which are spelt in an identical manner (identity in spelling) or in a manner so similar as to be considered identical under the provisions of the code but based on different types.

- (Primary homonym)- any of two more identical species group referred to the same nominal genus when first published
- (Secondary homonym)- two more identical species group referred to the same nominal genus as a result of transferences, reclassification or combination of one or more taxa from another genus to other genera

- The senior homonym is used and junior ones are usually rejected.
- Eg: *Noctua veriegata*(Insecta)  
*Noctua variegata*(aves)

- The senior homonym is valid and the junior homonym needs a Replacement name. As per the code of ethics in systematics, any zoologist who finds out the homonym must by way of professional etiquette inform the author of the junior homonym (in the example 1 Mukerjee) and give the said author an opportunity to propose a replacement name.

- If the said author is not alive, the reviser can propose a name and in that case it will be courteous to name the taxa after the author of the junior homonym. Example: *Sycophila mukerjeei* Narendran if Narendran is the reviser. In such cases the original author (in this case Mukerjee) of the junior homonym loses the species since it will be now associated with the name of the reviser (here Narendran).

# THE TYPE AND ITS IMPORTANCE

- In nomenclature, an object that serves as basis for the name of a taxon is known as the type. The methodology used for fixing a type is known as 'typification' and the type may or may not be the most typical member of the taxon.
- It only fixes the name of particular taxon and the two are permanently and intimately associated

- In taxonomy a species is held to have only one correct name and the type associated with that name is the type of that species.
- The type forms the basis for taxonomic description and the taxonomic description contains mainly the features of the type.
- The type of a genus is the type species and the type of a family is the genus. The type helps the reviser to find out the real features of the species when the original description of the species is poor or inadequate.

- The type of the species belongs to science when it is published and it no longer becomes the sole property of the author.
- Every bonafide taxonomist is entitled to examine the type when required. In many cases the type shows only part of the characters of the species.
- The type specimen is specifically chosen by the original author or a later taxonomist.
- The type-series of a species consists of all the specimens on which the original author bases his species.

# KINDS OF TYPES

- 1. Holotype : It is a single specimen selected by the original author to represent the taxon and so designated or indicated as the 'type' at the time of publication of the original description.
- 2. Paratype : After labeling the holotype, any remaining specimen(s) of the holotype series can be labeled paratypes in order to identify the individuals of the original type series.

- 3. Lectotype: If a type series contain more than one specimen and a holotype has not been designated, any subsequent worker may designate one of the specimens as the lectotype.
- 4. Syntype: If the author did not designate a holotype or lectotype but based his original description of a new species on single specimen or group of specimens, they are known as syntypes.

- 5. Neotype: If no holotype, lectotype or syntype is known to exist (or has been lost), then the first reviser of the group may select a specimen which is fully fitting to the original description of the species. A type specimen chosen in this manner is called a neotype.
- 6. Allotype: According to the rule 72 A of Zoological code the term 'allotype' may be used to a 'paratype' specimen of the opposite sex to the holotype. Most recent workers have abandoned this term in their works.

The code of Botanical Nomenclature recognizes the following kinds of types :

- 1. Holotype, 2. Paratype, 3. lectotype, 4. Syntype and 5. Neotype. All these are the same as for zoological nomenclature. In addition to the above, the following types are also recognized by the botanical code. They are:

- 1 .Isotype : This is a specimen which is a duplicate of the holotyp.e with the same collection data of the holotype.
- 2. Epitype: A specimen or illustration selected to serve as an interpretative type when the holotype, lectotype or neotype (all original materials associated with the validly published name) cannot be critically identified for the purpose of application of the name of the taxon.