

Quadrant II – Transcript and Related Materials

Programme: Bachelor of Science (First Year)

Subject: Botany

Course Code: BOC 102

Course Title: Biodiversity II (Vascular Plants)

Unit: Botanical Nomenclature

Module Name: Typification and Author Citation

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Notes

Introduction to typification

Typification is one of the guiding principles of the International Code of Nomenclature for algae, fungi and plants and therefore holds great significance in plant taxonomy.

When a species is described as new, the author must indicate a representative specimen on which the description of the new species is based. Such a representative specimen is called as the nomenclatural type or 'type' and the methodology is called typification.

The Code strictly recommends to designate and deposit the holotype in a permanent responsible herbarium and to indicate, as '*typus*' or '*holotypus*', the nomenclatural type along with the description or diagnosis of the taxon. In case of highly delicate specimen, sometimes, preservation becomes difficult. At such times, an illustration or figure or a description may serve as the type.

Further, for the taxa of higher ranks, species serves as a type for a genus and genus serves as a type for a family. Here, the species or genus name alone suffices the purpose and is considered as the full equivalent of its type. Principle of typification does not apply to names of taxa above the rank of family.

Typification categories

For species typification, seven categories are recognised.

1. Holotype or type: is the specimen chosen by the author as the nomenclatural type.
2. Isotype: is the duplicate of holotype. If several branches of a tree are collected at the same time, one specimen is chosen as type and the rest becomes isotypes.
3. Paratype: is the specimen cited with original description other than the holotype or isotype.
4. Syntype: When an author cites two or more specimens as type, they become syntypes if they are not individually designated as type.
5. Lectotype: is the specimen selected from original material to serve as nomenclatural type when the holotype was not designated at the time of publication or if the holotype is lost or destroyed.
6. Neotype: is the specimen selected subsequent to the description of a species to serve as nomenclatural type if no original specimen exists or is missing.
7. Epitype: is the specimen selected to serve as type when the holotype, lectotype or previously designated neotype is demonstrably ambiguous and cannot be critically identified for purpose of application of the name to a taxon.

Importance of typification

Typification hold significance in botanical nomenclature as:

1. It serves as diagnostic standards for comparison of specimens.
2. It provides stability leading to a regulated and unambiguous nomenclature.

Introduction to author citation

In botanical nomenclature, author citation refers to the name of plant researcher who first validly described the taxon. It may refer to one or more authors. In case the names are long they may be abbreviated. It is important to note that the author names should neither be underlined nor typed in italics.

Some examples to indicate how author names are written are as follows:

- *Coffea arabica* Linn.
- *Polyalthia rufescens* Hook.f. & Thomson

Rules of author citation

The basic rules of author citation are as follows:

1. When two or more authors publish a new taxon jointly, their names are linked by 'et' or '&'.
e.g. *Delphinium viscosum* Hook.f. et Thomson or *Delphinium viscosum* Hook.f. & Thomson

2. When more than 3 authors are involved in proposing a taxon jointly, citation is normally restricted to the first author and is followed by *et al.*

e.g. *Lapeirousia erythrantha* var. *welwitschii* (Baker) Geerinck, Lisowski, Malaisse & Symoens is cited as *Lapeirousia erythrantha* var. *welwitschii* (Baker) Geerinck *et al.*

3. Names of 2 authors are linked by 'ex.' when the first author has proposed a name but the name was validly published by the second author.

e.g. *Acalypha racemosa* Wall. ex. Baill

4. When the name of a taxon is changed by transfer from one taxon to another or by change in the rank of taxon, the original specific epithet is retained, the name of original author is placed within parentheses and name of author who got the name changed is placed outside the parentheses.

e.g. *Cynodon dactylon* (Linn.) Pers.

5. Names of the authors are linked using '*in*' when the first author publishes a new taxon in another author's publication.

e.g. *Carex kashmirensis* Clarke *in* Hook.f.

6. Names of two authors are linked using '*emend*' when the second author makes some change in the diagnosis of a taxon without altering its type

e.g. *Phyllanthus* Linn. *emend* Mull.

Importance of author citation

Author citation makes the scientific name more complete, accurate and easily verifiable at a global level. This is better illustrated through the example mentioned below.

Utricularia caerulea Linn. & *Utricularia caerulea* Clarice are two names referring to two different taxa. It would have been impossible to recognise this if the author citations were not given.
