



Taxonomic Literatures

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What are the Taxonomic Literature

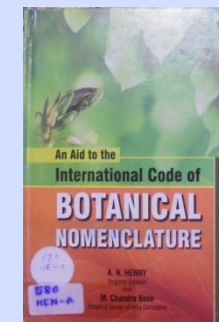
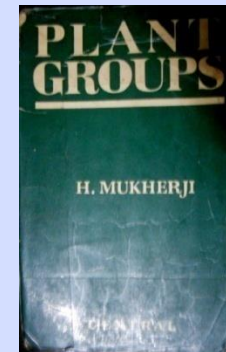
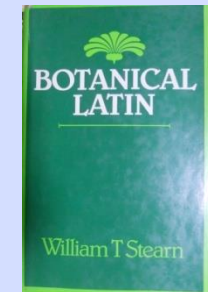
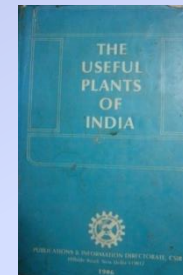
- Literatures in Systematic Botany or commonly known as Taxonomic literature refers to all inclusive writings (published or unpublished) and numeric and graphic representations that relate to classification, identification, nomenclature, description and relationship of organisms and taxa. Collection consists of books, manuscripts, magazines, journals, films, tapes, drawings, illustrations and paintings.

TYPES OF LITERATURES IN SYSTEMATIC BOTANY

1. General Literatures in systematic Botany.
2. General Index
3. Botanical Glossaries and Dictionaries
4. Floras and Manuals
5. Monographs and Revisions (Conspectus and Synopsis)
6. Periodicals or Journals or Current Literatures (Indian and Foreign)
7. Abstracts and Guides
8. Bibliography

GENERAL TAXONOMIC LITERATURES

1. Important recent and classical literatures
2. Evolutionary background
3. Nomenclature
4. Terminology and description of taxa
5. Identification of plants to families
6. Accounts of plants families
7. Books on different types of plants
8. Distribution of general reference work
9. Icones(Illustrations)





Icons (Illustrations)

An icon (from Greek word for "image") is a work of art, most commonly a painting. Many workers who have prepared botanical drawings by artists under their careful observation are referred to as Icons in the context of taxonomic literatures.

Some of important icons are as follows:

- i. **Roxburgh Icons** – (1824). It was published in 35 volumes, containing 2533 plates,
- ii. Illustrations of Himalayan Plants – (1885). By J.D.Hooker .
- iii. Wight's Icons – (1838 – 1853). It was published in 6 volumes, containing 2101 plates. Reprinted in 1963 from Madras.

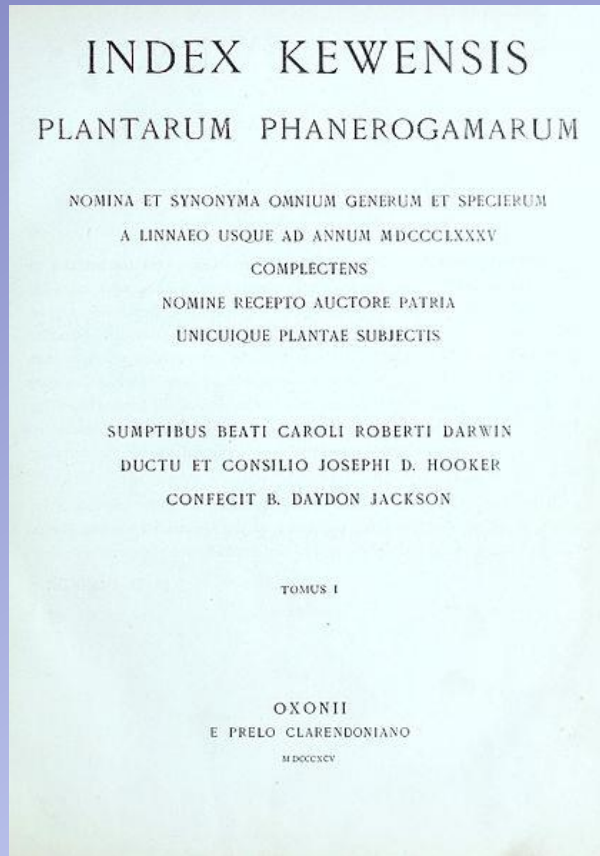
2. General Index

These are compiled volumes and continuously being compiled in respect to names of flowering plants published throughout the world till date. An index provides an alphabetic listing of taxa with reference to their publication. Index serves as an aid to locating quickly the source of original publication of a name.

e.g.

Index Kewensis : 2 vols., 21 Suppls.(Oxford : 1893-2000)

Since 1885, the Royal Botanic Gardens, Kew, has been indexing names of seed plants at the level of genus and species published since 1753, and of all ranks from family downward since supplement 16, and making them available in a series of bound volumes, the Index Kewensis.



Index Muscorum – Index for Bryophytes

Index Nominum Genericorum (ING)

A 3-volume work published in 1979 under the series *Regnum Vegetabile*. The first supplement appeared in 1986. It has now been put on the database and can be directly accessed through the Internet.

Index Herbariorum : Also available on the internet.

Gray Herbarium Card Index: Began at Harvard in 1890. Lists ferns, allies, seed plants of the western hemisphere. Duplicates in part, *Index Kewensis*.

Torrey Card Index: *Author index to publications.*

3. Botanical Glossaries and Dictionaries

Alphabetic listing of terms or subject matter with explanation of meaning.

Botanical Glossaries: A glossary is an alphabetical list of different terms with their explanations.

A Glossary of Botanical Terms – B.D.Jackson (1928) – 4th Edn.

Botanical Dictionaries: A botanical dictionary may include lists and description of all known genera of certain plant group.

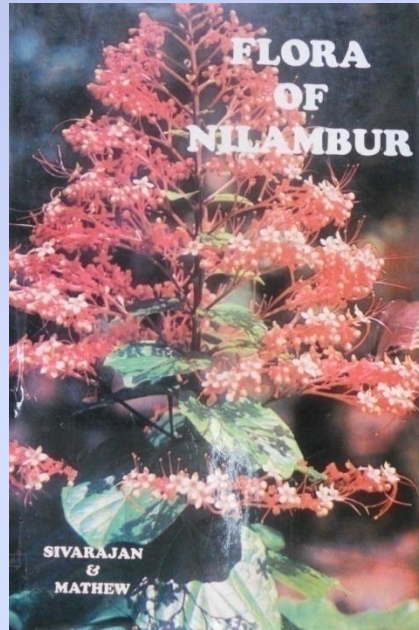
- i) *A Dictionary of the Flowering Plants and Ferns* – J.C.Willis (1973), 8th edition by H.K.Airy Shaw, Cambridge.
- ii) *A Dictionary of Economic Products of India* – G.Watt (1889-1896), Reprinted – 1972, Calcutta.
- iii) *Mabberley's Plant Book* – D. J. Mabberley, (2008) .Cambridge. University Press. Cambridge.(3rd edn.).

4. Floras and Manuals

Flora :

A flora is an inventory of the plants of a defined geographical region.

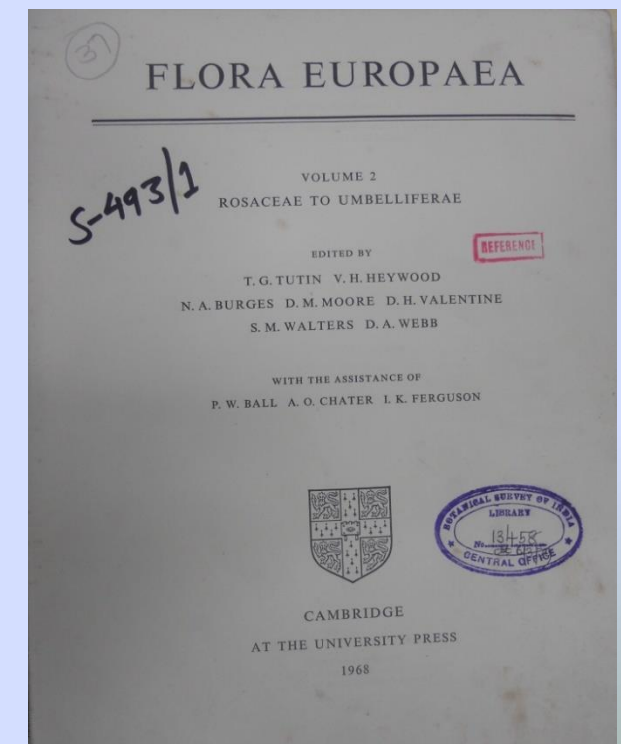
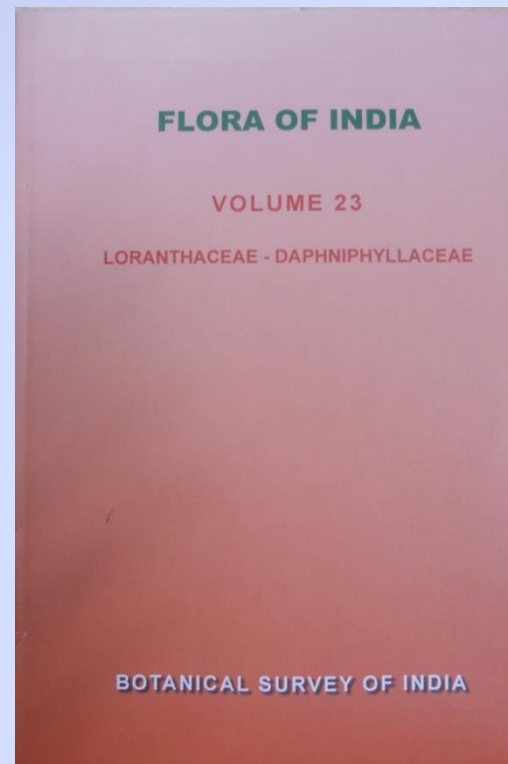
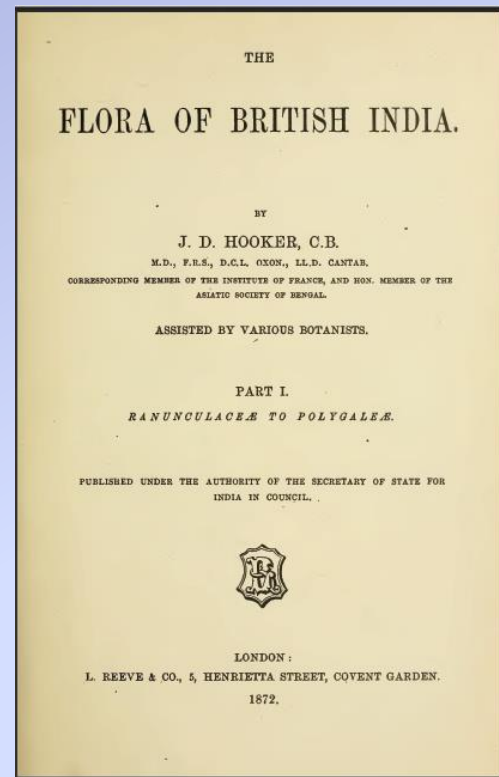
List of the Flora maybe found in the *Geographical Guide to the Floras of the World* by S.K.Blake (Part I, 1941 ; Part II, 1961) and *Guide to the Standard Floras of the World* by Frodin(1984).



- i) Local flora covers a limited geographical area, usually a state, city, a valley or a small mountain range.

Examples: *Flora of Nilambur* by V. V. Sivarajan and P. Mathew (1997).

- ii) **Regional Flora** includes a larger geographical area, usually a large country or a botanical region. Examples: *Flora of British India* by Sir J.D. Hooker (1872-97), *Flora Malesiana* by C.G. Steenis (1948).
- iii) **National Flora** is a flora covering a country. Example: *Flora of India* (vol 1-5, 12, 13 & 23) BSI, Kolkata.
- iv) **Continental Flora** covers the entire continent. Example: *Flora Europaea* (vols. i-v by T.G. Tutin et al. - 1964-1980)



Manuals

- Manuals: A manual is a more exhaustive treatment than the flora, always having keys for identification, description and glossary but generally covering specialized groups of plants.
 - A more exhaustive treatment than flora.
 - No collection number provided.
 - Citations are usually absent.
 - Keys, descriptions, glossary in more details
 - e.g. Manual of Cultivated Plants – L.H.Bailey (1949)*

5. Monographs and Revisions (Conspectus and Synopsis)

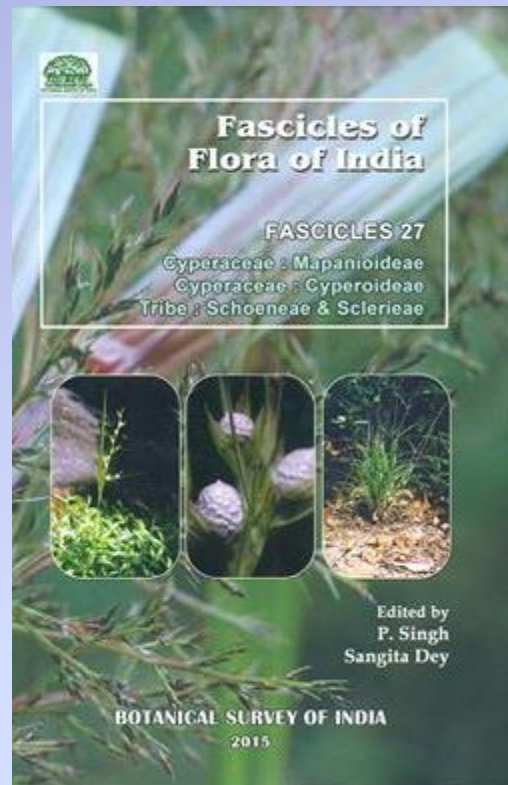
Monographs : A monograph is a comprehensive taxonomic treatment of a taxonomic group, generally a genus or a family, providing all taxonomic data relating to that group.



- A comprehensive taxonomic treatment of a small taxa (genus or a family).
- Usually with worldwide scope.
- Exhaustive descriptions sometimes with illustrations.
- It is a Biosystematic study.

Examples: *A monograph of the Genus Avena* – B.R.Baum (1977)

Revision : A revision is less comprehensive than a monograph incorporating less introductory material and including a synoptic literary review. A revision includes a complete synonymy but the descriptions are shorter and confined to diagnostic characters.



- Complete Synonymy.
- Descriptions shorter, usually confined to diagnostic characters
- Mainly based on herbarium studies.

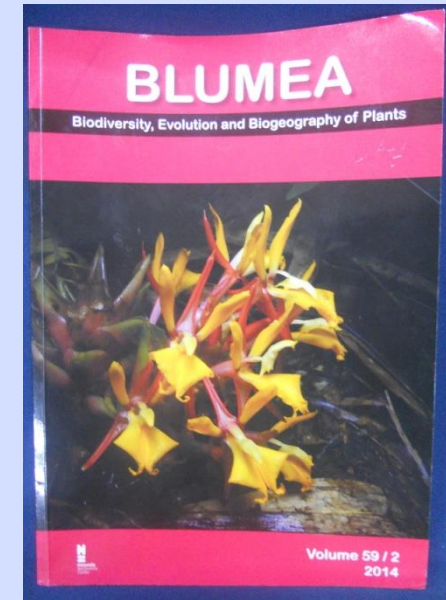
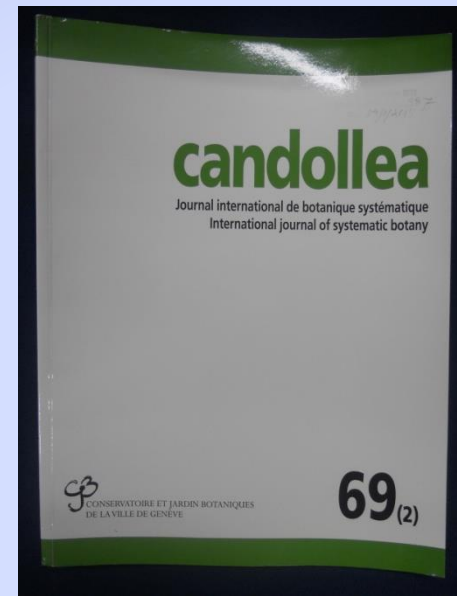
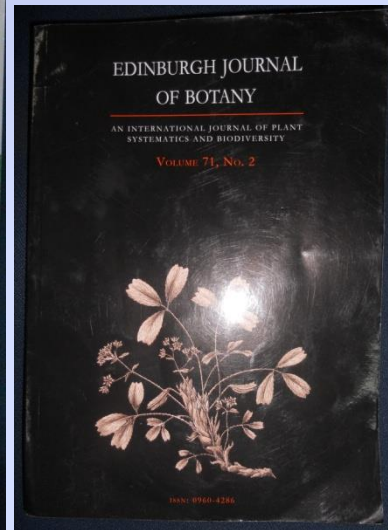
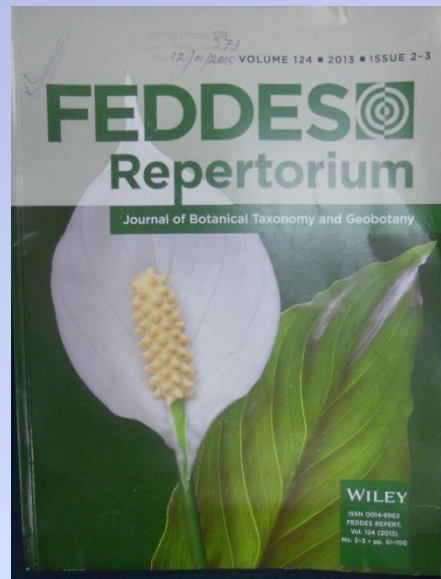
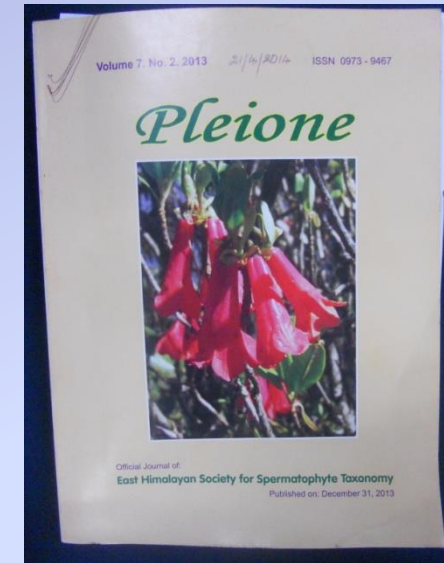
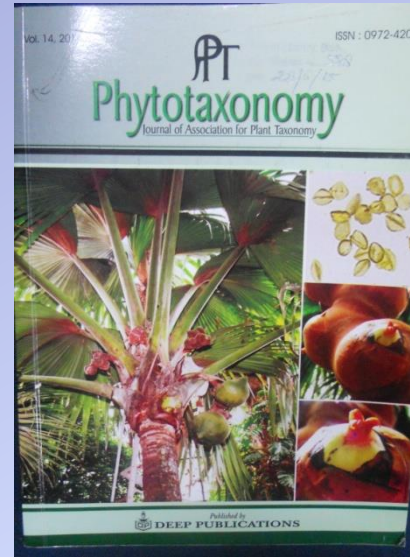
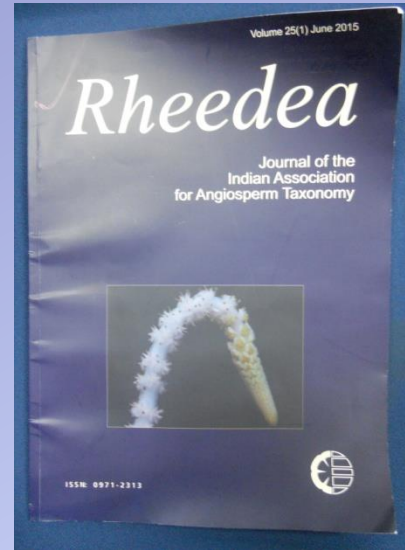
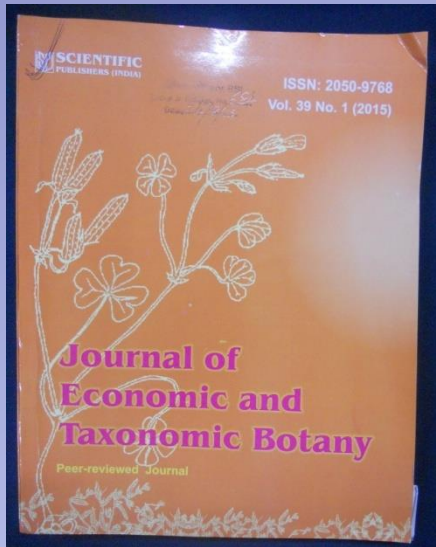
Example: Fascicles published by BSI on different taxa.

6. Periodicals or Journals or Current Literatures (Indian and Foreign)

Periodicals are publications which are issued at regular intervals, such as journals, magazines, etc. They are also often referred to as serials. Periodicals usually consist of a collection of articles. Periodicals can offer some advantages over books depending upon information .

Some Indian Journals on Botany :

1. ***The Bulletin of the Botanical Survey of India***, Kolkata, *Bull.Bot. Surv. India*.
Now Known as ***Nelumbo***.
2. ***Indian Forester***, Dehra Dun, *Indian For.*
3. ***Journal of the Botanical Society of Bengal***. Dept. of Botany, University of Calcutta . Kolkata, *J.Bot.Soc. Ben*.
4. ***Rheedia***, Indian Association for Angiosperms Taxonomy, Calicut, *Rheedia*
5. ***Phytotaxonomy***, Association for Angiosperm Taxonomy, Dehra Dun.



Abstracts and Guides

Abstracts provide a summary of various articles published in various journals throughout the world.

Examples: *Biological Abstract*, *The Kew Record of Taxonomic Literature*.

Guides are useful to help taxonomist to locate relevant literature concerning a taxonomic group or a geographical region.

Example: *Guide to the Standard Floras of the World* – D.G. Frodin (1984).


8. Bibliography

This is a list of names of publication of books and scientific literature on specific topics during a specific period.

Example: *An Annotated and Bibliography of Taxonomic Botany of Penninsular India* –Karthikeyan, Nayar and Raghavan (1959-1978) ;

Bibliography of Flora and Ethnobotany of West Bengal.
(2010) – Sunit Mitra, Subhajit Bandyopadhyay and Sobhan Kumar Mukherjee (ISBN : 978-81-924956-0- 6). Siliguri, West Bengal, India.

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Online Volumes

- Volume 1** Introduction
- Volume 2** Pteridophytes
38 families
- Volume 4** Cycadaceae through Fagaceae
21 families
- Volume 5** Ulmaceae through Basellaceae
24 families
- Volume 6** Caryophyllaceae through Lardizabalaceae
13 families
- Volume 7** Menispermaceae through Capparaceae
11 families
- Volume 8** Brassicaceae through Saxifragaceae
8 families
- Volume 9** Pittosporaceae through Connaraceae
6 families
- Volume 10** Fabaceae
1 family
- Volume 11** Oxalidaceae through Aceraceae
35 families
- Volume 12** Hippocastanaceae through Theaceae
18 families
- Volume 13** Clusiaceae through Araliaceae
33 families
- Volume 14** Apiaceae through Ericaceae
9 families
- Volume 15** Myrsinaceae through Loganiaceae
9 families
- Volume 16** Gentianaceae through Boraginaceae
8 families



Pedicularis anas
Credit: Harvard University Herbaria

8. E-Flora

E-Flora is any Flora which is published online or available online for access to everyone.

Example: *e-Flora of China*

Available on

http://www.efloras.org/flora_page.aspx?flora_id=2

BRACKETED KEYS

- 1 Inflorescence minutely pubescent (2)
- + Inflorescence glabrous (3)

- 2 (1) Inflorescence 20-35 cm; staminodes 3 or 4; drupe 5-10 cm, mesocarp fleshy, endocarp flattened. **1 *M. indica***
- + Inflorescence ca. 14 cm; staminodes absent; drupe 3.5-5 cm, mesocarp thin, endocarp rounded or slightly flattened. **2 *M. siamensis***

- 3 (1) Leaf blade 2-3 cm wide; fruit rounded; seed oblique... **3. *M. persiciforma***
- + Leaf blade 3-6 cm wide; fruit elongate; seed not oblique (4)

- 4 (3) Pedicel and sepals often sparsely pubescent; drupe not beaked.
..... **4. *M. laurina***
- + Pedicel and sepals glabrous; drupe beaked. **5. *M. sylvatica***

BRACKETED KEYS

Single-access key (also called **dichotomous key**, **sequential key**, **analytical key**, or **pathway key**) is an identification key where the sequence and structure of identification steps is fixed by the author of the key.

Multi-access key is an identification key which overcomes the problem of the more traditional single-access keys (dichotomous or polytomous identification keys) of requiring a fixed sequence of identification steps. A multi-access key enables the user to freely choose the characteristics that are convenient to evaluate for the item to be identified

Literatures are now online!!!

- <http://www.biodiversitylibrary.org/>
- <http://www.botanicus.org/>
- <http://www.ipni.org/>
- <http://www.sil.si.edu/digitalcollections/tl-2/>



Thank you!