**Herbarium**

Herbarium is a place where plants collected from far and wide preserved and -pressed in dried condition. They are kept in pigeon holes of almirahs according to any accepted system of classification.

The dried plant is pasted on a sheet. Fleshy members like Cactaceae are preserved in preservative and are not dried. It is a great filing system for information about plants primarily in the form of actual specimens and secondarily in the form of recorded notes on labels attached on the sheets. Herbarium is a vast reservoir of plants.

The “Herbarium” has two meanings; one is a repository or storehouse of collected plant specimens and second is a plant specimen according to accepted international standards. If the term “Herbarium” followed by a code assigned by “Index Herbariorum (IH)” authorities in the parenthesis (Thiers, 2016), it shall be consider as repository and the plural is “herbaria”. If the term “Herbarium” is not followed by the code in parenthesis we shall be consider it as a “plant specimen” and plural is “herbarium specimens”.

The art of Herbarium was initiated by an Italian taxonomist **Luca Ghini** (1490-1556). The concept of preserving plant specimens in dried form is 450 years old. The oldest preserved herbarium specimen is kept in Rome, collected by the naturalist Gherardo Cibo a pupil of Luca Ghini (1532). It is now estimated that there are nearly 350,000,000 specimens that are documented from the world’s vegetation. These herbarium specimens are available at approximately 3,000 herbaria in the world, with approximately 12,000 associated curators and plant specialists.

IH is a detailed directory of public herbaria of the world. They are authorized to identifying the plant and provide “Voucher Specimen Number”. Each herbarium in the Index is assigned an official code that is used as a standard reference for citation. It consists of the herbarium code, institution, city, state, staff member, correspondent, and research specialty. The data is maintained and available at New York Botanical Garden Herbarium at http://sweetgum.nybg.org/science/ih/ (Thiers, 2016).

With the advent of Information Technology, new techniques are adopted now for the herbaria include **the micro-herbaria in the form of photographs** and **the electronic herbaria in the form of digitized databases**.

The Voucher herbarium specimen is pressed plant sample deposited for future reference and it will verify the identity of the specific plant used in a study. It should be deposited in a recognized herbarium indexed in “Index Herbariorum”. The herbaria also keep the voucher materials such as seeds, wood sections, pollen, micro slides, fluid preserved flowers, fruits etc.

Herbaria keep all categories of plants specified by International Code of Nomenclature of algae, fungi and plants (ICN) (McNeill et al, 2012; Anonymous, 1996). Although the herbarium and specimen preparations are mostly confines to seed plants, there are specific techniques practicing to algae, fungi, and plants (Anonymous, 1996). These specimens are in liquid preservation for non-vascular plants, bryophytes etc. (Anonymous, 1996).

Since the identification and voucher specimen number is essential in these days for research as well as for publications such as plant natural products, pharmaceutical sciences, medicinal botany and allied subjects (WHO, 1998; Hildreth et al, 2007), the information on the herbarium specimens preparation for the plant identification and voucher specimen number we would be presenting useful information on these aspects.

**Functions and Importance of Herbarium**

Herbaria, dried pressed plant specimens and their associated collections data and library materials, are remarkable and irreplaceable sources of information about plants and the world they inhabit. They provide the comparative material that is essential for studies in taxonomy, systematics, ecology, anatomy, morphology, conservation biology, biodiversity, ethnobotany, and paleobiology, as well as being used for teaching and by the public. The sheets also provide biogeographic information that can be used to document the historic ranges of plants, to locate rare or endangered species, or to trace the expeditions of explorers and plant collectors. Physically, the specimens are important sources of genetic material for analyses and DNA of pollen for palynological studies. Herbarium sheets are often shared among researchers worldwide, and the specimens of many herbaria have been digitized to further facilitate their use.

**Functions of Herbarium**

1. Discover or confirm the identity of a plant or determine that it is new to science (taxonomy);
2. Document the concepts of the specialists who have studied the specimens in the past (taxonomy);
3. Provide locality data for planning field trips (taxonomy, systematics, teaching);
4. Provide data for floristic studies (taxonomy);
5. Serve as a repository of new collections (taxonomy and systematics);
6. Provide data for revisions and monographs (systematics);
7. Verify Latin plant names (nomenclature);
8. Serve as a secure repository for “type” specimens (taxonomy);
9. Facilitate and promote the exchange of new material among institutions (taxonomy);
10. Allow for the documentation of flowering and fruiting times and juvenile forms of plants (taxonomy, systematics, ecology, phenology);
11. Provide the basis for an illustration of a plant (taxonomy, general publishing);
12. Provide pollen for taxonomic, systematic, and pollination studies as well as allergy studies (taxonomy, systematics, pollination ecology, insect ecology, medical studies);
13. Provide samples for the identification of plants eaten by animals (animal ecology);
14. Document which plants grew where through time (invasive species, climate change, habitat destruction, etc.);
15. Document what plants grew with what other plants (ecology);
16. Document the morphology and anatomy of individuals of a particular species in different locations (environmental variation);
17. Provide material for microscopic observations (anatomy, morphology);
18. Serve as a repository for voucher specimens (ecology, environmental impact studies, etc.);
19. Provide material for DNA analysis (systematics, evolution, genetics);
20. Provide material for chemical analysis (pollution documentation; bio-prospecting, for coralline algae - determining past ocean temperatures and chemical concentration);
21. Provide material for teaching (botany, taxonomy, field botany, plant communities);
22. Provide information for studies of expeditions and explorers (history of science);
23. Provide the label data necessary for accurate data-basing of specimens (biodiversity and conservation biology, biogeography);
24. Serve as a reference library for the identification of parts of plants found in archeology digs (paleoethnobotany);
25. Provide space and context for accompanying library and other bibliographic resources (library sciences, general research, taxonomy, etc.);
26. Serve as an archive for related material (field notebooks, letters, reprints, etc.);
27. Provide information on common names and local uses of plants (ethnobotany, economic botany);
28. Provide samples for the identification of plants that may be significant to criminal investigations (forensics);
29. Serve as a means of locating rare or possibly extinct species via recollecting areas listed on label data (conservation biology, environmental impact statements, endangered species, etc.);