

Herbaria

Herbarium is a collection of pressed, dried plant specimens mounted on specified sheets, identified and arranged in the order of an approved and well known system of classification. It also refers to the institution where dried plant specimens are maintained and studied.

Example: Herbarium of Botanical Survey of India, Coimbatore.

Procedures

- A twig with leaves, inflorescence or flowers is collected from shrubs and trees.
- In the case of herbs, the collected plant specimens should contain both vegetative and reproductive parts.
- They are dried by keeping them between the folds of old newspapers.
- It is necessary to change these papers at regular intervals, until the plants are well dried.
- The plant specimens along with their parts are dried in a plant press.
- It consists of two boards with straps, which help in tightening the newspapers with specimens between the boards.
- The dried specimens are pasted on the herbarium sheets of standard size 41 cm X 29 cm.
- The process of attaching dried and pressed plant specimens on herbarium sheets is known as mounting of specimens.
- All the mounted specimens are sprayed with fungicide like 0.1% solution of Mercuric chloride.
- To protect these dried specimens from the attack of insects, pesticides such as naphthalene and carbon di-sulphide can be used.
- The heavy parts of plants such as seeds and fruits are kept in packets and attached to the sheets.
- When a new name for a species is suggested, it is the rule that plant specimens of the same should necessarily be deposited in a recognized herbarium.
- These specimens are called type specimens. The name of the family is always based on type genus.
- These specimens are most valuable part of herbarium and they are handled with special care. They are stored in fire-proof cabinets.
- If the herbarium specimens are handled with special care, they will be in good condition for a long time.
- Precautions should be taken against attacks of fungi and insects.
- It is always better to use chemicals, which can repel the insects from herbarium specimens.
- The herbarium is always accompanied with a label.
- It carries the information about the botanical name of the plant, name of the family, habit, place and date of collection and name of the person who collected the specimens.

HERBARIA AND ITS USES IMPORTANCE OF HERBARIUM

- Herbarium is a source of knowledge about the flora of a region or a locality or a country.
- It is a data store in which the information on plants are available.
- The type specimens help in the correct identification of plants.
- It provides materials for taxonomic and anatomical studies.
- Typical pollen characters have been well emphasized in taxonomy.
- Morphological characters of the pollen remain unaltered even after storage upto nearly 200 years.
- It is very much useful in the study of cytology, structure of DNA, numerical taxonomy, chaemotaxonomy, etc.
- It acts as a reservoir of gene pool studies. Because of its importance, several herbaria have been established at centres.

Functions of Herbarium

A modern Herbarium serves valuable functions or utility. The following are few important functions of a herbarium are:

1. It provides necessary information for verifying and identifying newly collected plants.
2. It is an invaluable conservatory of plant material and data.
3. It is storehouse of collections including the valuable type specimens. The herbaria greatly aid in all kinds of taxonomic researches.
4. Serves as a fundamental resource for identification of all plants of the world.
5. It serves as a source for collection of biodiversity. Most estimates on global biodiversity today are based on herbarium collection only.
6. It aids in biodiversity monitoring by carrying out security of herbarium collection to obtain quantitative baseline data on the distribution and abundance of keystone species is essential for all monitoring programmes.
7. It serves as a repository of voucher specimens on which various botanical researches are carried out.
8. Aids in assessment of conservation status of a taxon.
9. Vast collection of a particular species in a herbarium aids in assessing the diversity or variations exhibited by a species in its distributional range helping in population biology studies.
10. It serves as a source for search of new genetic material for improvement of cultivated stock.
11. It helps in development of computer database on plants and maintains active links to international networks of systematic resources and electronic database.
12. It provides research facilities to the students of taxonomic research.
13. It provides complete idea of vegetation and place of origin of plants.

14. The ecological, economical and ethnobotanical data may be obtained, and

15. It provides key for the preparation of modern system of classification.

The herbaria are classified as:

(a) Major or National Herbaria which cover the flora of the world and serve the purpose of research as well as identification.

(b) Minor Herbaria which include smaller herbaria such as Regional herbaria, local herbaria and College / University herbaria

Some Important National and International Herbaria		
S.No.	Name of herbarium	Total No. of specimens
1.	Herbarium of Royal Botanical Gardens, Kew, London, England.	More than 60,00,000
2.	Herbarium of Indian Botanical Garden, Kolkata, India.	More than 10,00,000
3.	Botanical Survey of India, Coimbatore, Tamil Nadu.	More than 1,90,000
4.	Presidency College Herbarium, Chennai, Tamil Nadu.	More than 10,000
5.	Rapinat Herbarium, Trichy, Tamil Nadu.	More than 12,000

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