

|                 |                  |            |
|-----------------|------------------|------------|
| <i>Solanum</i>  | <i>tuberosum</i> | Potato     |
| <i>Solanum</i>  | <i>nigrum</i>    | Nightshade |
| <i>Panthera</i> | <i>leo</i>       | Lion       |
| <i>Panthera</i> | <i>tigris</i>    | Tiger      |
| <i>Homo</i>     | <i>sapiens</i>   | Man        |

| Common Name | Biological Name          | Genus            | Family        | Order      | Class           | Phylum/Division |
|-------------|--------------------------|------------------|---------------|------------|-----------------|-----------------|
| Man         | <i>Homo sapiens</i>      | <i>Homo</i>      | Hominidae     | Primata    | Mammalia        | Chordata        |
| Housefly    | <i>Musca domestica</i>   | <i>Musca</i>     | Muscidae      | Diptera    | Insecta         | Arthropoda      |
| Mango       | <i>Mangifera indica</i>  | <i>Mangifera</i> | Anacardiaceae | Sapindales | Dicotyledonae   | Angiospermae    |
| Wheat       | <i>Triticum aestivum</i> | <i>Triticum</i>  | Poaceae       | Poales     | Monocotyledonae | Angiospermae    |

#### 1.4 Taxonomical Aids:

They are useful in agriculture, forestry and industry. These studies are essential for knowing our bioresources and biodiversity. Taxonomic work involves studies both in field and in laboratory.

Taxonomists have developed different types of taxonomic aids to help in identification, nomenclature and classification of organisms.

**The important taxonomic aids are herbaria, botanical gardens, museums, zoological parks and keys.**

##### 1.4.1 (A). Herbarium:

**It is a depository of plant specimens in dry condition.** The specimens are dried, mounted on a paper and properly labeled.

##### Procedure:

1. Collection of specimens
2. Pressing and drying: to remove moisture content
3. Sterilization or poisoning: to prevent fungal attack
4. Mounting: Pasting or stitching on a sheet
5. Labeling of specimens: Local name, Common English name, Binomial nomenclature, Family name, Place of collection, Date and time of collection, Collectors name.
6. Storage of herbarium sheets.

Each herbarium sheet is to be labeled properly to avoid confusion. The label should carry scientific name along with author's name, local name, name of family, locality, date of collection, name of collector etc. The label is pasted on the right hand corner at the bottom of the herbarium sheet.



Information about the collected specimens is published in the form of a book called flora.

It gives a list of total plant species in a particular region together with a brief description of the same.

Some important floras of India are **Flora of British India, Flora of Delhi, Flora of Madras, Flora of Travancore etc.**

The largest Herbarium of the world is **Herbarium of Royal Botanical Garden at Kew in England.**

The largest Herbarium in India is **Central National Herbarium in the Indian Botanical Garden at Kolkata established in 1787.**

**1.4.2 (B). Botanical gardens:** Botanical gardens are places or institutions that maintain the living plant specimens of different varieties of plants for reference.

A botanical garden contains plant species from various corners of the world. Plant species in botanical garden are grown for identification purpose. Each plant is labelled. The label should carry its botanical name and its family. Botanical garden has green houses, a library, a herbarium, research laboratory etc. It is, therefore, not merely a garden but a botanical institution. At present there are over 600 botanical gardens in the world.

**The Hanging Gardens of Babylon are considered among the wonders of the ancient world.**

The largest Botanical Garden of the world is **Royal botanical garden at Kew in England. It is called the botanical capital of the world.** Bentham and Hooker were associated with this garden.

The largest botanical garden of **India is Indian Botanical garden at Kolkata.** The largest tropical botanical garden in Asia is **Tropical Botanical Garden at Thiruvananthapuram** in Kerala.



KEW GARDEN

#### 1.4.3 Museum:

It is the institution where artistic and educational plants or animals are preserved, stored and exhibited to public. There are natural science museum, Science museum and Zoological museum.

All colleges maintain museums in Botany and Zoology Departments. Animals are also preserved in museums. The specimens are fixed in the jars or containers in chemical solutions and are preserved for longer duration. The specimens are correctly identified and labeled. They are stored and a catalogue is prepared for future reference.

Plants and animal specimens are also preserved as dry specimens. Insects are preserved in insect boxes after collecting, killing and pinning. Birds and mammals are stuffed and preserved. Animal skeletons are also kept in museums.

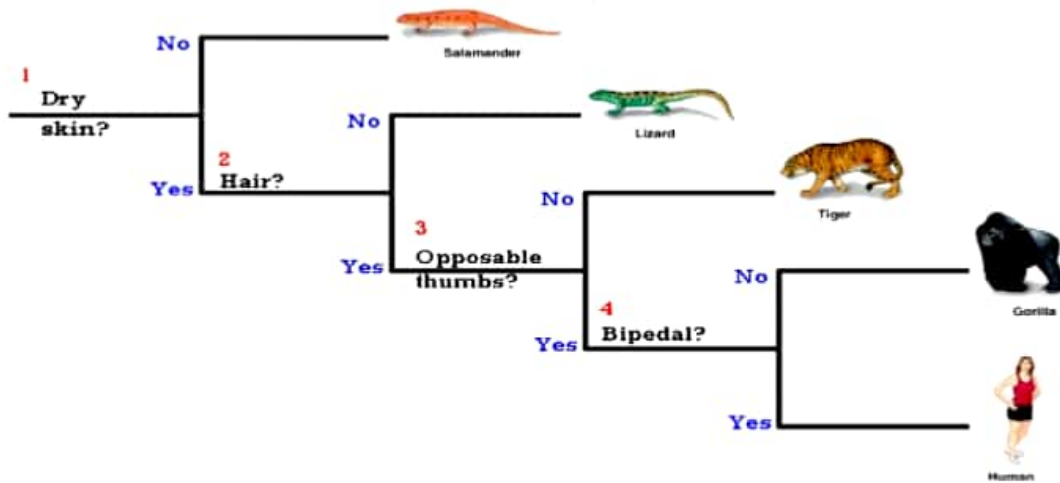


**1.4.5 (D).Keys:** A key is a tool by which each species in a group of organisms may be identified. It is prepared by a taxonomist to help other biologists to identify the species. Taxonomic keys are based on contrasting characters. The characters are in a pair called couplet.

Key may be of two types-**indented key and bracketed key.**

If a key provides sequence of choices between two or more statements of characters of species, it is called **indented key**. Each statement in a key is called a **lead**.

If the pairs of contrasting characters are not repeated by subdividing characters and each character is given a number in bracket, it is called **bracketed key**.



**(e). Zoological parks:**

Zoological parks are the places where **animals are kept in protected environment under human care**. These enable us to learn about their food habits and behavior.

The largest zoo in the world is **the zoological park of Kruger in South Africa**.

The largest zoo in India is **the Zoo of Kolkata**.



**OTHER TAXONOMIC AIDS:** Besides the above mentioned taxonomic aids, **flora, manuals, monographs and catalogues** also serve as taxonomic aids for correct identification.

**Flora:** These contain the **actual account of habitat and distribution of plant species of a given area**. It provides the index to plants occurring in a particular area. Hooker compiled first complete flora of India.