SYSTEMS OF CLASSIFICATION

Classification may again be defined as an arrangement of plants into an orderly sequence. Plant classification follows a system of arrangement set forth by a specialist in matters of **phylogeny**. Up to the present day; the system of classification is based on the form of plants – whether trees, shrubs or herbs or the numerical distribution of parts of the flowers – number of stamens, pistils, ovary or real phylogenetic relationships. Not less than 50 different systems have been proposed with three holding position of dominance. These are:

1. Artificial system;
2. Natural system and
3. Phylogenetic system.

1. **Artificial system-** was originated by Carolus Linnaeus (between 1707 – 1778). In this system; all flowering plants were sub-divided among 23 Classes. The first ten contain those plants with 1, 2, 3, 4 up to 10 stamens. Other classes were those with didynamous, tetradynamous, monodelphous, syngenesious. The system is artificial because it does not bring related genera and often; related species are not brought together.

2. **Natural system –** was originated by two French Botanists Bernard de Jussien and Antoine Laurent de Jussien (1699 – 1766 and 1748 – 1836 respectively). The system was based on the natural characters such as ovary position, fussion of floral parts and types of ovule arrangement. The system brings together the related taxa.

3. **Phylogenetic system –** This is a system based on Darwin's theory of evolution and descent. It is believed now that existing forms of life are products of evolutionary processes and in combination of characters and the result of gene exchange and others of rotation.

Other systems are the modifications of the above named systems.

PLANT NOMENCLATURE

The assignment of names to plants is called **plant nomenclature.** The International Code of Botanical Nomenclature has provided series of ranks of taxa. The Code, in effect, defines the categories only by listing their sequence. It may not be necessary to use all the categories provided by the Code for a small Order, Family or Genus, but the sequence of categories must not change. However, certain categories (i.e. species, genus, family) are essential if nomenclature is to function. The categories commonly used in the flowering plants are the Class, Sub-class, Order, Family, Genus, Species, and sometimes either Subspecies or Variety or even sometimes both. Categories such as Sub-family, tribe, Subgenus, Section and so on may be used and are frequently necessary in large and complex groups. In actual practice, species are grouped into genera and genera into families and so on through the

sequence of categories. Each rank in turn is more inclusive than the lower categories. This categorization gives order and accessibility to the classification of plants and provides a meaningful system of information input or retrieval. The principles adopted in plant nomenclature provide that botanical progress is predicated on a universally accepted system of nomenclature that has for its objectives the following:

1. Fixity of names,
2. Nomenclatural clarity,
3. Freedom from ambiquity and
4. Avoidance of useless creation of names.

The scientific name of plant is its Latin name i.e. a name taken from Latin words or a name Latinized. The name of a species is binary combination consisting of the name of the genus. e.g. *Nauclea* then followed by the single specific epithet as *diderrichii* or *latifolia*. The generic name begins with capital letter while the specific name begins with small letter except where it signifies the name of a person. The scientific name of a species is undelined e.g. <u>Khayagrandifoliola</u> or typed in italics without underlining, if word processing packages are used. Thescientific name is usually followed by the name of the first person to describe and name the species. Such a person is referred to as the author or authority. If a name is changed the original author's name is put in parenthesis or bracket, then write the new name.

Family names ending with –aceae are based upon generic names; for example, Brassica is the base of Brassicaceae.

FIELD CHARACTERS IN TREE IDENTIFICATION

Leaves, stems, roots and the reproductive parts are of great importance in tree identification.

Generally, leaves provide more xters for identification purposes than all other vegetative parts. The descriptive value of leaves is found in the xtersof :

1. The leaf structure
2. Type of leave
3. Arrangement of leaves on the stem
4. The shape or form of the leaf/leaflet
5. Tips and margins of leaves
6. Vestiture – the covering (hairy/glabrous)
7. The leaf bases
8. Testure