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Principles of Dicotyledoneae classification

Ban A H Alkhafaji
Department of Biology, College of Education of Pure Science, Iraq

Abstract
Plant classification is subject to a number of controls through which it is known how to classify each type of plant that must be distinguished in the light of a specific characteristic or group of common characteristics between it and another classes, orders, and\or species. The classification of plant come from the nature of life. So, the history of development is very necessary and essentially almost number of classification depend on the nature. The evaluation of plant diversity between about (eighteenth and nineteenth) century marked a way toward the relationship between a classification members.

Keywords: Plant classification, plant taxonomy, scientific classification

Introduction

Plant taxonomy is concerned with plants, determines their description, classifies them, and names them. Plant taxonomy is the most important branch that deals with the study of plants. Plant taxonomy is closely related to the plant diversity system, with little difference between them. Plant diversity practically includes the study of the relationships between plants and their evolution, at the highest levels, while plant classification involves dealing with the actual field treatment of samples taken from plants. Plant taxonomy is a traditional science that does not have any close agreement regarding the identification and placement of taxa. Plant classification serves to study the common and heterogeneous characteristics of each group of plants and to identify similarities and differences between plants [1]. Animals eat organic molecules, while plants have the ability to change energy from light to organic energy, through a process known as photosynthesis. The basic unit adopted for classification is the species, which represents a similar group capable of reproducing among themselves. In the broadest and most comprehensive plant taxonomy is the genus, and many genera form one family, and many families form an order. In many numbers of studies of plant taxonomies, we can say the flowering plants be treated as a coherent-group. The major popular descriptive name has been (Angiospermae.), with Anthophyta (flower - plants) a second choice (both unranked) [2].

There are also different features that distinguish plants from animals [2], including:

- Plants have cell walls made of cellulose.
- They are polyploid.
- They have stable growth and sacrifice.

Monocotyledons Comparison

Not depending on the number of cotyledons, a number of species belonging to monocots \ and dicots have been observed. There is importance in determining the differences between them in order to distinguish and classify. For example, dicot groups that are differentiated early on contain some monocots such as scattered vascular bundles, and close flowers, and other structural and functional characteristics [3]. In addition, the monocots have some of the characteristics of dicots, where the veins of the leaves are of the lattice type, as shown in table (1) below:

Table 1: shown the monocotyledons-comparison.

Feature	In monocots	In dicots
Number of parts of each flower	In threes (flowers are trimerous)	In fours or fives (tetramerous or pentamerous)
Number of furrows or pores in pollen	One	Three
Number of cotyledons (leaves in the seed)	One	Two
Arrangement of vascular bundles in the stem	Scattered	In concentric circles
Roots	Are adventitious	Develop from the radicle
Arrangement of major leaf veins	Parallel	Reticulate
Secondary growth	Absent	Often present

Traditional Classification of Plants

1. Dicotyledoneae, or (Magnoliopsida.).
2. Monocotyledoneae or (Liliopsida).

Dicotyledoneae, or (Magnoliopsida.)

Dicotyledonous plants, also called dicotyls are a group of the flowering plants, this is called angiosperms, because it has a typical characteristics, (seeds have 2-embryonic leaves) or (2-cotyledons). There have approximately two hundreds thousands species, as for the other group of them, they are known as monocots (monocotyledons), and usually each of these two types has one plant. These 2-groups have 2-parts of flowering plants [3], as shown in figure (1).

Fig1: Dicotyledon in scientific classification.

Magnoliopsida, is the name for a class of flowering plants [4], as shown in figure (2)

Fig 2: Magnoliopsida, in scientific classification.

In the Takhtajan-system and Cronquist-system, this name was used for the group called (dicotyledons), as the internal-taxonomy, as shown in the following:

Class\Magnoliopsida.(Dicotyledons).

- Subclass\Magnoliidae.
- Subclass\Nymphaeidae.
- Subclass\Nelumbonidae.
- Subclass\Ranunculidae.
- Subclass\Caryophyllidae.
- Subclass\Hamamelididae.
- Subclass\Dilleniidae.

Magnoliids (or Magnolianae), are flowering plants, with more than 10,000 species, including magnolia, nutmeg, cinnamon, avocado, black pepper, tulip tree and a number of others. They are the third largest group of angiosperm plants after the eudicots and monocots [5]. This group is distinguished by having elaborate flowers, and possessing pollen grains with one pore, and the leaves are usually branched, as shown in figure (3).

Fig 3: Magnoliidae, or (Magnoliids.), in scientific classification.

Ranunculidae, is a subfamily of plants that are used in some taxonomic systems but not in others. As necessary, it includes the order Ranunculales, but otherwise there is a difference between classification systems, as shown in figure (4).

Fig 4: Ranunculus auricomus, in scientific classification.

Caryophyllidae, is the botanical name denoted by the subfamily order. Currently, there is no complete consensus about the orders it includes, with the exception that it is supposed to contain the order Caryophyllales, as shown in figure (5). Caryophyllidae is the botanical name denoted by the subfamily order. Currently, there is no complete consensus about the orders it includes, with the exception that it is supposed to contain the order Caryophyllales. It should be known that the well-known system that used this name is the (Cronquest-system), and it is found in the original version of 1981 that this system is as follows:
Subclass; Caryophyllidae

- Order; Caryophyllales
- Order; Polygonales
- Order; Plumbaginales

Fig 5: Caryophyllidae, in scientific classification.

Hamamelididae, is the botanical name representing the order of a subfamily, given that some members of the hamamelidid have the ability to tolerate transients such as catkins. According to the molecular-phylogeny works, Hamamelididae appeared to be a polyphyletic-group [6, 7].

Fig 5: Hamamelididae, in scientific classification.

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