Importance of Taxonomical Identification Associated with Medicinal Plants

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Medicinal Plants which are used for Traditional Systems of Medicine in Sri Lanka have different local names in different regions of the Island. Basically, Tamil and Sinhalese names which are popularly applied for these herbs, but more than one names are locally engaged for a single plant, when villagers or indigenous physicians who collect and prescribe medicinal plants for treating their patients. Therefore, correct botanical identification of any medicinal plant which may be selected to conduct a research, for the benefit of our future generation should be confirmed weather the species is common or rare.

Fixation of the excepted botanical name for a plant can be done through its Taxonomical Identification. Plant taxonomy is nothing but the subject called Systematic Botany that involved with scientific techniques to search morphological characters carefully, for ranking a given plant up to the Family, Genus, Species and Sub-species so on. The Taxonomic Rank of a plant starts from the Kingdom, then the Division, Class, Order, Family, Genus and finally ends with Species name. Further those can be dived in to Sub Kingdoms, Sub Divisions up to Sub Species and even variety level.

Present methodology what we follow to write a Botanical Name was introduced by a Great Botanist Linnaeus during 1750 year,declared himself as Binomial Nomenclature. In this method, a botanical name includes the Genus, Species followed with the Author or Authors who involved of naming or renaming the plant after scientific investigations.

For an example, the scientific name of *Sandal Maram*, *Suduhandun*, *Swetha chandana* or White Sandalwood can be written as *Santalum album* Linn. Herein this name *Santalum* is the Genus, album the Species and Linn. Indicates the author's name in short form. When you write an author's full name, the dot should be removed, as *Cinnamomum zeylanicum* Blume without the dot. This is the Synonym of *Kuruwu* or *Kurundu*, internationally known as Ceylon Cinnamon. On the other hand, if you want to display a scientific name to highlight sub species level, it should be written as Rhododendron arborium Smith subsp. *Zeylanicum* [Booth] Tagg and this sub species is endemic to Sri Lanka. Habit of this plant is a small tree growing in high elevations above 4000 feet from the mean sea level, flowers are pinkish red. The flower is misidentified as *Asoka* because princess **Seetha** was kept by king

Rawana in an *Asoka* forest according to the Ramaayana but clinically, *Asoka* is something else, mentioned in the Ayurvedic literature as *Saraca asoca* [Roxb.] de Wild. which is a famous *Raktha - sthambana* or Hemostatic crude drug in traditional medicines prescribed to control excess bleeding.The main part of the tree which used for clinical purpose is *Asoka* Bark.

Botanical family characters are very important when the Genus of the plant is found out. If you think about *Cassia* Genus coming under the Family Fabaceae, herbs, shrubs and trees are commonly included. Normally, levees are compound and the number of leaflets per a leaf are varied. One of the examples is *Cassia tora* Linn. Known as *Vaddutakarai* or *Pethithora*. Here the number of leaflets per a leaf are three pairs. Similar herb *Cassia absus* Linn. has only two pairs of leaflets. Accordingly, number of leaflets could be applied to separate out the species under *Cassia* Genus. When the number of leaflets are similar but flowering and fruiting characters are different, further investigations can be carried out to separate the species. Generally, Flowers of *Cassia* Genus have 10 stamens.

But different species can be identified according to the arrangement of stamens. Comparing *Cassia fistula* Linn. Kavani, *Konnei* or *Ehala*, with *Cassia auriculata* Linn. known as *Avarai* of *Ranawara*, various morphological characters can be used to separate out the botanical identity. First of all, we can observe Habit of these two plants. One is a medium sized tree and the other a shrub. Then the number as well as the size of the leaflet. Both flowers are similar in color [Yellow] but *Cassia fistula* Linn. has pendulous flowering panicles and *Cassia auriculata* Linn. panicles are not drooping type. Number of stamens are similar, as you know, that should be 10, and arranged in three levels. Lower 3 stamens are sickle shape, large and fertile. Middle 4 stamens are also fertile but smaller, above that, sterile 3 smallest stamens can be seen. Interesting character of these two flowers are fragrancy. One is fragrant and the other one is not aromatic. Definitely, you can tell which species has fragrant flowers.

Taxonomical Identification of flora is not a new subject but coming from our generations. Morphological characters of various plants were carefully observed by our grandparents and the traditional knowledge what they learnt from the nature passed to the next generation without keeping any secrets. This knowledge is sometimes hidden in legends and associated with old stories. One of the popular story is related to the flower of *Cassia auriculata* Linn. and **God Krishna**.

One-day God Krishna was walking through a forest with his disciples, in a spring, all the plants used to turn their branches towards the path way and worship him but a beautifully bloomed shrub of *Cassia auriculata* Linn. was not cared and sat without moving. God Krishna observed what happened and told to his disciples, see this proud shrub because of its, blooming flowers. Today onwards, nobody may pluck flowers from this bush to worships gods or offer in the temples. From that day

the fragrancy of the flower was vanished and worshippers avoid *Cassia auriculata* Linn. flowers for temples. This story tells us the skills and traditional knowledge of our ancestors associated with plants. They carefully observed the odorless flower of *Cassia auriculata* Linn. compared with *Cassia fistula* Linn.

Now a day's people don't consider about our wealth of floral diversity. Plants are different from human beings as well as from animals. Biological Diversity among plants also highly variable. Please remind that no animal or human can survive without plants. Plants supply us food, living gas [oxygen] and spring water without any demand from their side. Actually plants love us divinely and satisfy about their tiredless service themselves on this Earth. Majority of you all are academics, associate with the medical field. One of our duties is todevelop the skills on scientific identification of medicinal plants, their conservation, cultivation and sustainable usage for the benefit of our future generation.