

A BRIEF HISTORY OF PLANT CLASSIFICATION

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The human being has been utilizing plants as a source of food, shelter, fuel, and medicine since the dawn of civilization. They used to classify the plants according to their utility and passed on the information to generations through practices. The historical development of classification has passed through several major phases. Aristotle (385 B.C. to 323 B.C.) and Theophrastus (370 B.C. to 285 B.C.) made descriptive contributions which resulted in the development of formal taxonomic groups. The earliest systems of classification were based on gross morphology or structural resemblances of plants such as herbs, shrub and trees and evolved to the latest phylogenetic systems incorporating all phenetic information.

Indian contributions in origin and development of taxonomy:

Early civilization of Babylonia, Egypt, China and India practised a sort of plant classification as they knew a fairly good number of plants and grouped them on the basis of their economic considerations.

Vrikshayurveda (Science of Plant) is one of the earliest works dealing with plant life. It was compiled by an Indian scholar Parasara (250 B.C. to 120 B.C.). The book has separate chapters on morphology, properties of soil, forest types of India and some details of internal structure also, which suggest ~~that~~ the use of magnifying apparatus of some kind.

Majumdar (1946) in a conference at Calcutta presented a paper entitled "Growth and development of Plant Sciences in India", in which he said that the system mentioned in "Vrikshayurveda" was more advanced than the ones developed in Europe before the 18th century. In this compilation several families, known as ganas, are very clearly distinguished and are easily recognisable even today. Samiganyam (present day Leguminosae) were distinguished by hypogynous flowers, five petals of different sizes, gamosepalous calyx and the fruit, a legume.

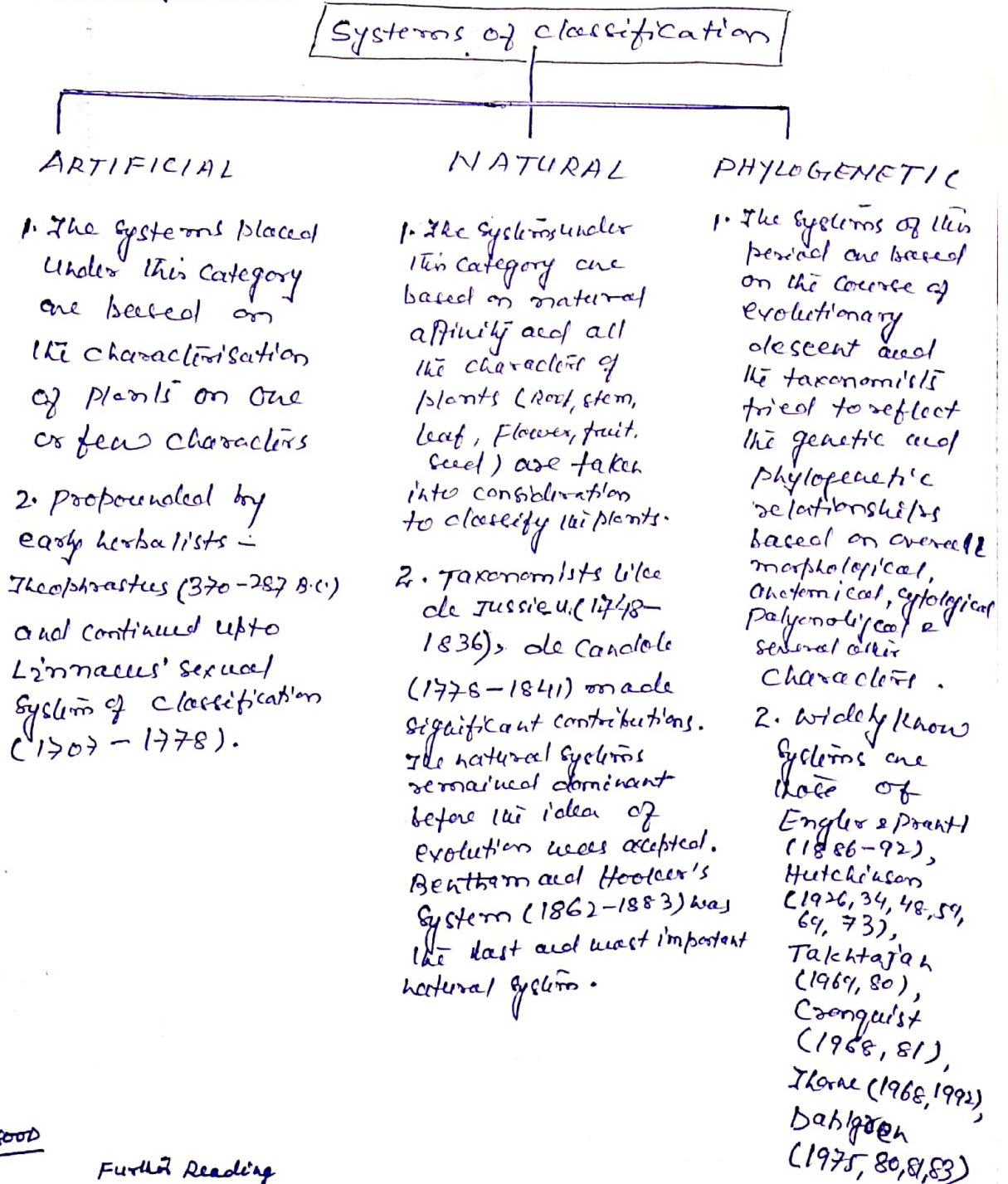
Swastikaganyam (family - Cruciferae) has a calyx resembling a swastika, four free sepals and petals, six stamens (of which 2 are shorter), 2 carpels forming a bilocular fruit and ovary superior.

Tripitsaganyam (evidently the Cucurbitaceae) have epigynous, sometimes bisexual flowers, five sepals, five united petals, three stamens and a bilocular ovary with three rows of seeds. This great scientific description could not reach Europe at that time when scientific knowledge was just making its debut.

Among the other Indian scholars, Charaka (Charaka - 1st century A.D.) wrote Charaka Samhita, in which he recognised trees without flowers, trees with flowers, herbs which wither after fructification and other herbs with spreading stems as separate groups. This huge treatise on Indian medicine, containing 8 divisions, is largely based on a much earlier treatise published by Agnivesh. A.C. Kavidatna translated it into English in 1897.

Systems of classification:

The development of Plant Systematics has passed through several major phases and various attempts have been made to classify the plants. All these systems of classification fall in one of the three categories — Artificial, Natural, and Phylogenetic.



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Further Reading

1. Taxonomy of Angiosperms by V. Singh & A.K. Jadh
2. Plant Systematics by Gurcharan Singh.