

BSc. Botany (Hons) – 2ND Year
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Bentham and Hooker System of Classification of Plants

George Bentham and Joseph Dalton Hooker were two British botanists who were associated with the Royal Botanic Gardens of Kew, England. They gave a system of botanical taxonomy on the basis of natural affinities but did not take evolution into account, meaning it was a pre-Darwinian era system.

Characteristics

- Their work was published in *Genera Plantarum* in three volumes between 1862 to 1883 in Latin.
- They classified the phanerogams (seed producing plants) in their book into 97,205 species of flowering plants.
- They divided the 97,205 species into 202 families and 7,569 genera.
- The phanerogams were divided into three classes – Dicotyledonae, Gymnospermae and Monocotyledonae.
- The class Dicotyledonae is further divided into three sub classes namely, Polypetalae, Gamopetalae and Monochlamydeae.
- Out of the 202 families, 3 belong to Gymnospermae and the rest 199 belong to Dicotyledonae and Monocotyledonae.
- Bentham and Hooker focused on the type of perianth, the number of whorls and whether the whorls are fused or free for their basis of classification.
- The family Ranunculaceae of the Dicots is the most primitive one and is therefore placed in the beginning. Similarly, the family Poaceae is considered to be an advanced one and is therefore placed at the end.

Merits of the System

1. The system is very practical to use because each category is described with distinguishing characteristics.

2. Although the system is not based on phylogeny or evolution, the placement of dicots after monocots was a big advancement.
3. The orders that did not have enough evidence and were of disputed nature were placed under *Ordines anomali*.
4. The larger genera are divided into smaller sub-genera categories for easy identification.
5. The placement of Gamopetalae after Polypetalae is justified since fusion of petals is considered to be an advanced feature.

Demerits of the System

1. The placement of Gymnospermae between Dicotyledons and Monocotyledons is highly controversial due to the fact that gymnosperms are an entirely different group of plants.
2. Many other floral characters were not considered for the basis of classification.
3. It does not involve the concept of evolution.
4. The placement of families is based on single characters which wrongly places closely related families far apart.