

# Topic: Bentham & Hooker's System of classification

B.Sc. Botany Sub. II  
Group: A

Dr. Sanjeev Kumar Vidyarthi

Department of Botany

Dr. L.K.V.D. College, Tajpur, Samastipur

L.N. Mithila University, Darbhanga

## Bentham and Hooker's System

George Bentham (1800-1884) and Sir Joseph Dalton Hooker (1817-1911) was great plant explorer and geographer associated with royal botanical gardens and adopted a very comprehensive system of classification in their jointly published book genera plantarum.

This classification is based on the assumptions of de Candolle's classification. Their classification is purely natural as the knowledge of phyllogenicity was not detected and there was not the knowledge of theory of descent.

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There genera plantarum was accepted throughout the British Empire and the U.S.A and well adopted by all the botanists of the continent.

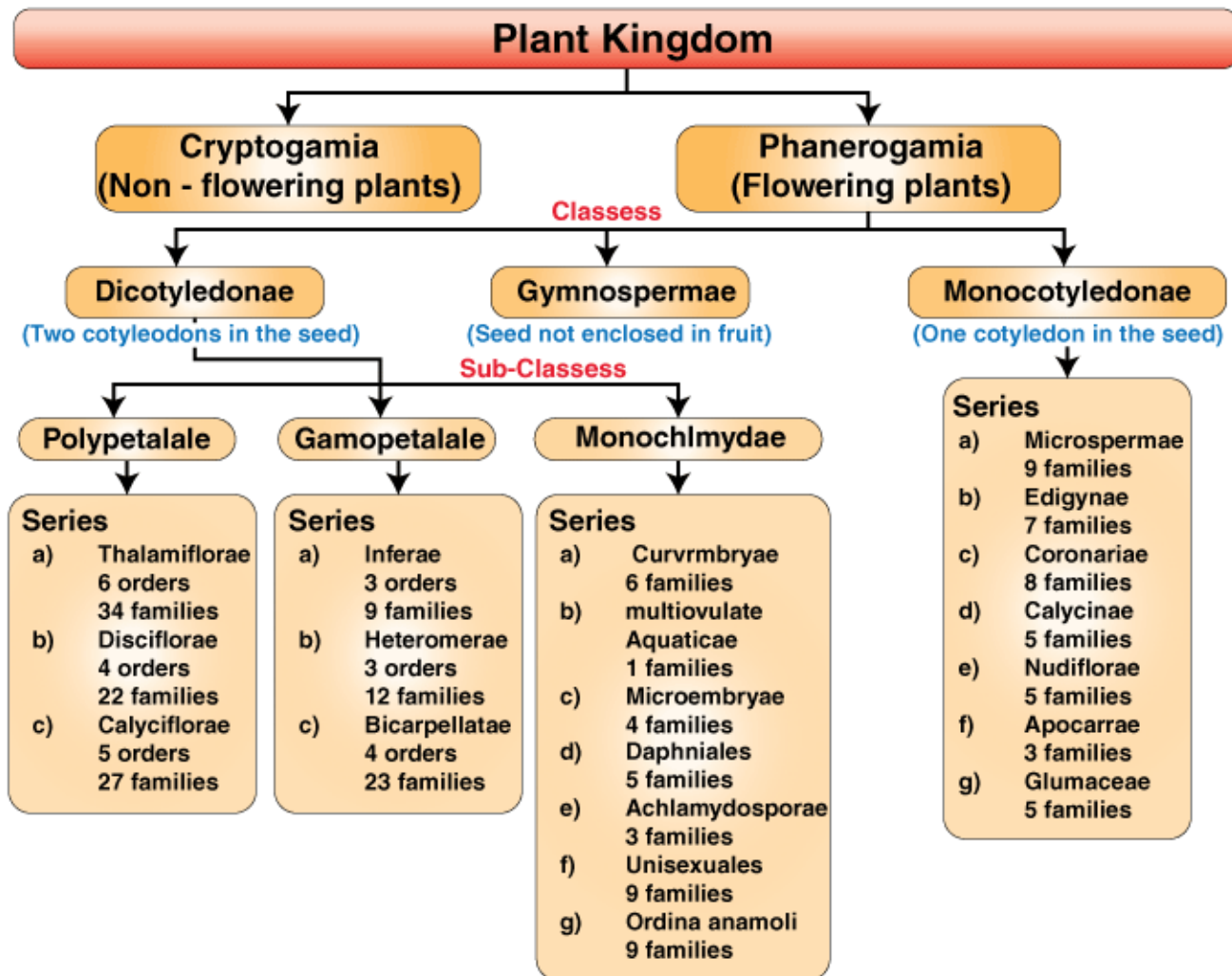
### Features of Classification

- i. This includes the names and descriptions of all genera of seed plant known so far and classified accordingly.
- ii. The plant kingdom comprises about 97205 species of seed plants under 202 orders in which

orders treated now as families.

iii. This orders further grouped under several cohorts, now treated as orders.

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v. They placed first dicotyledons, then gymnosperms and lastly the monocotyledons.

vi. They classify dicotyledons into 165 order gymnosperms into 3 orders and mono cotyledons into 34 orders.

vii. They divide dicotyledons in to 3 divisions and 14 series which further divided into cohorts and orders.

viii. The dicots started with family Ranunculaceae, with free sepals and petals and indefinite number of stamens and carpels are free. The dicots e4nds with family Labiatae with fused sepals and petals with definite number of carpels and stamens.

ix. Monocots divided into seven series. Which are directed grouped into orders without interpretation of cohorts.

Orders with epigenous flowers, i.e. Orchidaceous and Scitamineae were kept first, followed by orders with petaloid hypogynous flowers, i.e. Liliaceae. Then kept Palmaceae and Araceae, finally ended with Gramineae and Cyperaceae.

### Merits of Bentham and Hooker's classification

(a) It is very convenient to the taxonomists, because it has quite accurate descriptions based on the live specimens or preserved herbarium sheets.

(b) The description of plant species are easy to follow and of practical utility for identification of species.

(c) It has also taken care to provide information related to geographical distribution of various genera and species.

(d) The placement of monocots after the dicots, also appears to be in accordance with the evolutionary trees.

#### Demerits of Bentham and Hooker classification

(a) The position of Gymnospermae between dicots and monocots has not been acceptable and satisfactory.

(b) The system also does not take into account several important floral characters and neglects evolutionary consideration of genus, family and orders.

(c) Some closely related families are placed apart.

(d) Monochlamydae as a sub-class has been found to be an artificial group, and it becomes difficult to place closely related families like Chenopodiaceae and Caryophyllaceae close to each other.