

# Topic: **Role of Palynology in Taxonomy**

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# Role of Palynology in Taxonomy

## Palynology in taxonomy :Role 1.

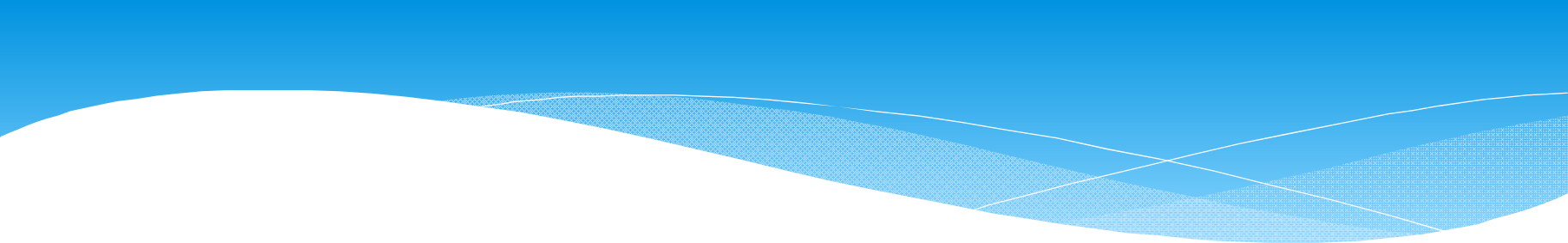
### Stenopalynous and Eurypalynous Taxon

#### i. Stenopalynous:

In many taxon, the type of pollen is characteristic and constant. Such a taxon is termed stenopalynous or unipalynous e.g., Asclepiadaceae, Cruciferae, Poaceae, Labiatae, etc. Stenopalynous taxa are generally considered to be very natural.

#### ii. Eurypalynous:

The taxon in which the types of pollen may vary considerably in size, aperture, stratification of exine, etc., are termed eurypalynous or multipalynous e.g., Acanthaceae, Rubiaceae, Verbenaceae. Eurypalynous taxa are heterogeneous, at least in certain instances.



Palynological data are particularly useful in the delimitation of eurypalynous taxa e.g. Acanthaceae, Asteraceae, Euphorbiaceae, Gentianaceae, Saxifragaceae, etc. Like families, genera may be stenopalynous or eurypalynous. For example, the acanthaceous genera such as Strobilanthus, Justicia, etc. have been split up by Bremekamp (1944) and more natural groupings have been proposed.

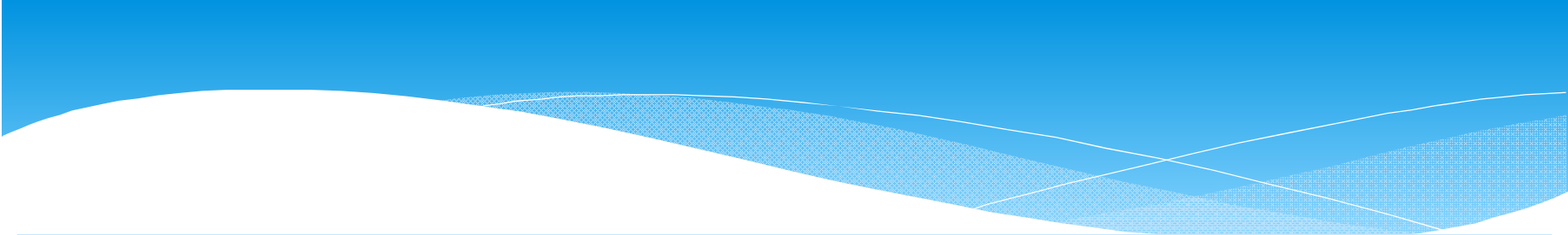
## **Palynology in Taxonomy: Role 2**

### **Family and Tribal Level:**

The families may be stenopalynous or eurypalynous.

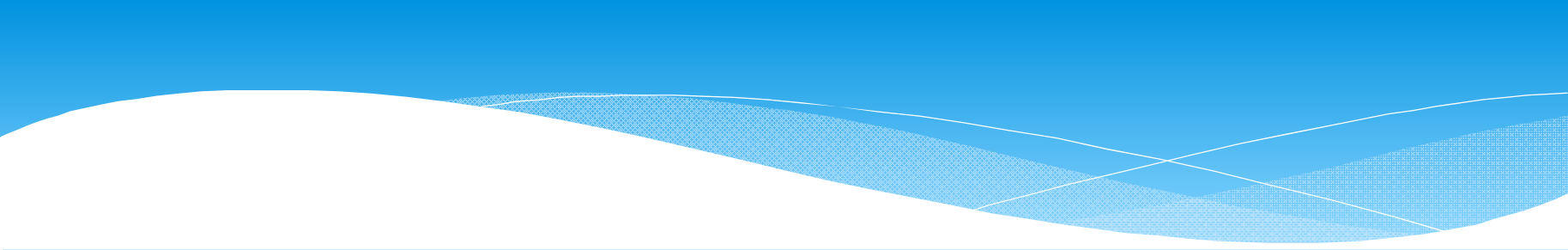
A few examples of the use of pollen characters in the taxonomy of some families and tribes are given below:

- The family Berberidaceae has been variously circumscribed by different



taxonomists. Recently based on pollen characters, Podophyllum where the pollen grains remain united, has been removed to a separate family Podophyllaceae. The pollen grains are free in the other members of Berberidaceae.

- Several families have distinctive pollen types. For example, Poaceae have smooth sulcate pollen, Malvaceae and Asteraceae have typically spinulose exine, and Plumbaginaceae have verrucate exine.
- The two families, Araceae and Lemnaceae under the same order Arales of Hutchinson are characterized by stenopalynous, 1-2-4-colpate, 3-porate or inaperturate and Arecaceae exine sculptured pollen in the former, while the latter is characterized by eupalynous, 1- porate and spinose pollen.

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- The palynological studies support the treatment of the tribe Bombaceae of the family Malvaceae as a separate family Bombacaceae. Palynological studies reveal that the exine is reticulate in the Bombaceae, whereas it is spinose in most of the Malvaceae.
  - Palynological evidences have also supported the Separation of Faeoniaceae from Ranunculaceae, Fumariaceae from Papaveraceae, and Nelumbonaceae from Nymphaeaceae.