TAXONOMIC KEYS
Single Access and Multi Access
Part one

Shivani Sharma

Asst. Prof in Botany

Govt College For Women, Gandhi Nagar, Jammu.

Taxonomic Keys

- Defifnition :Taxonomic keys is a device used for identification of plants and animals consisting of a series of contrasting / contradictory statements or propositions requiring the identifier to make comparisons and decisions based on statements in the key as related to the material to be identified.
- These were first published by Jean Baptiste – Lamarck in 1778.
- Helps in quick identification of unknown plant.

They are of 2 types

a. Single Access key b. Multi Access key.

Single Access Key

- Definition : In phylogenetics a Single access key is an identification key where the sequence and structure of identification steps is fixed by the Author of the key.
- Single access keys are closely related to decision trees or self balancing binary search trees.
- Always a choice between two contradictory statements is provided.
- One is accepted and one is rejected.
- Each statement is called LEAD and single pair of lead is called couplet.

Types of Single Access Keys (Dichotomous keys)

1. **<u>Indented key/yoked key</u>**-

   Indents the leads of the couplet a equal distance from the left margin.

   The two choices are labelled 1 and1’ or 1a and 1b.

2. **<u>Bracketed key</u>**-

   Both choices are given side by side.

   Choices are numbered/lettered.

Indented key on Rhododendron

- 1a.Flowers in shades of red

    2a. Flowers blood red, leaves oblong-ovate, leathery and thick matty texture- R.sikkimense

    2b.Fowers crimson red, leaves broad, oval to elliptic oblong, shiny green above- R.fulgens

- 1b.Flowers in shades of rose pink

    3a. Calyx 3-5 mm long, leaf undersurface covered by brown hair- R.wallichi

    3b. Calyx 1-2 mm long, leaf undersurface glabrous- R.campanulatum

Bracketed key on Rhododendron

- 1a. Flowers in shades of red--------go to 2
- 1b. Flowers in shades of rose pink------go to 3
- 2a.Flowers blood red, leaves oblong-ovate, leather and thick matty texture……R.sikkimense
- 2b.Fowers crimson red, leaves broad, oval to elliptic oblong,shiny green above- R.fulgens
- 3a. Calyx 3-5 mm long, leaf undersurface covered by brown hair- R.wallichi
- 3b. Calyx 1-2 mm long, leaf undersurface glabrous- R.campanulatum

Construction of Keys

- Always use constant characters, not variables.
- Never use terms such as large/small, instead make correct measurements.
- Characters always available are to be used rather than seasonal characters
- Always use positive terms. E.g. Stipule Is present - can be used but not-stipule is not present.
- As far as possible both choices of a pair to be started with the same word- e.g. Seeds round, Seeds oblong.
- If possible different pairs of choices should start with different words

e.g. Flowers white sepals free

sepals fused Flowers red

corolla 1-2 mm long corolla 3-5 mm long

Proper Use of keys

- 1. Appropriate keys to be selected from floras, manuals, handbook, monograph, revision etc.Cultivated plants- not usually given in floras. So for these- manuals treating such plants to be used.
- 2. Introductory comments to be properly read first.
- 3. Both leads should be read before making a choice. Sometimes the first lead may seem to be correct, the second lead may be more appropriate.
- 4. The meaning of unknown terms should be checked using the glossary
- 5. When measurements are used such as the length of leaf, fruit etc. several materials/ specimens to be measured.
- 6. No decision to be taken based on single observation.
- 7. Results should be verified by reading a description, comparing the specimen with illustration or an authentic herbarium specimen.

Draw Backs

- The key may not include all potential variations in the sps.
- May rely on features not present in the season.
- May not include all sps of interest.
- One may misinterpret and make a mistake.