

PHENETIC NATURAL CLASSIFICATION



ATTEMPT REFLECT OVERALL SIMILARITY

NO ATTEMPT REFLECT PHYLOGENY

SALIENT PHYLOGENETIC CHARACTERS
ARE NOT SELECTED

PHENETIC NATURAL CLASSIFICATION



PHENETIC NATURAL CLASSIFICATION

ATTEMPT REFLECT OVERALL SIMILARITY

NO ATTEMPT REFLECT PHYLOGENY

SALIENT PHYLOGENETIC CHARACTERS
ARE NOT SELECTED

ALL CHARACTERS EQUALLY SALIENT

PHENETIC NATURAL CLASSIFICATION

PHENETIC NATURAL CLASSIFICATION



SUBJECTIVE CHARACTER BIAS
ELIMINATED

PHENETIC NATURAL
CLASSIFICATION

PHENETIC NATURAL CLASSIFICATION



SUBJECTIVE CHARACTER BIAS
ELIMINATED

OBJECTIVE CLASSIFICATION

PHENETIC NATURAL
CLASSIFICATION



PHENETIC NATURAL CLASSIFICATION

**SUBJECTIVE CHARACTER BIAS
ELIMINATED**

OBJECTIVE CLASSIFICATION

**USES HOMOLOGOUS & ANALOGOUS
CHARACTERS**

PHENETIC NATURAL CLASSIFICATION

PHENETIC NATURAL CLASSIFICATION

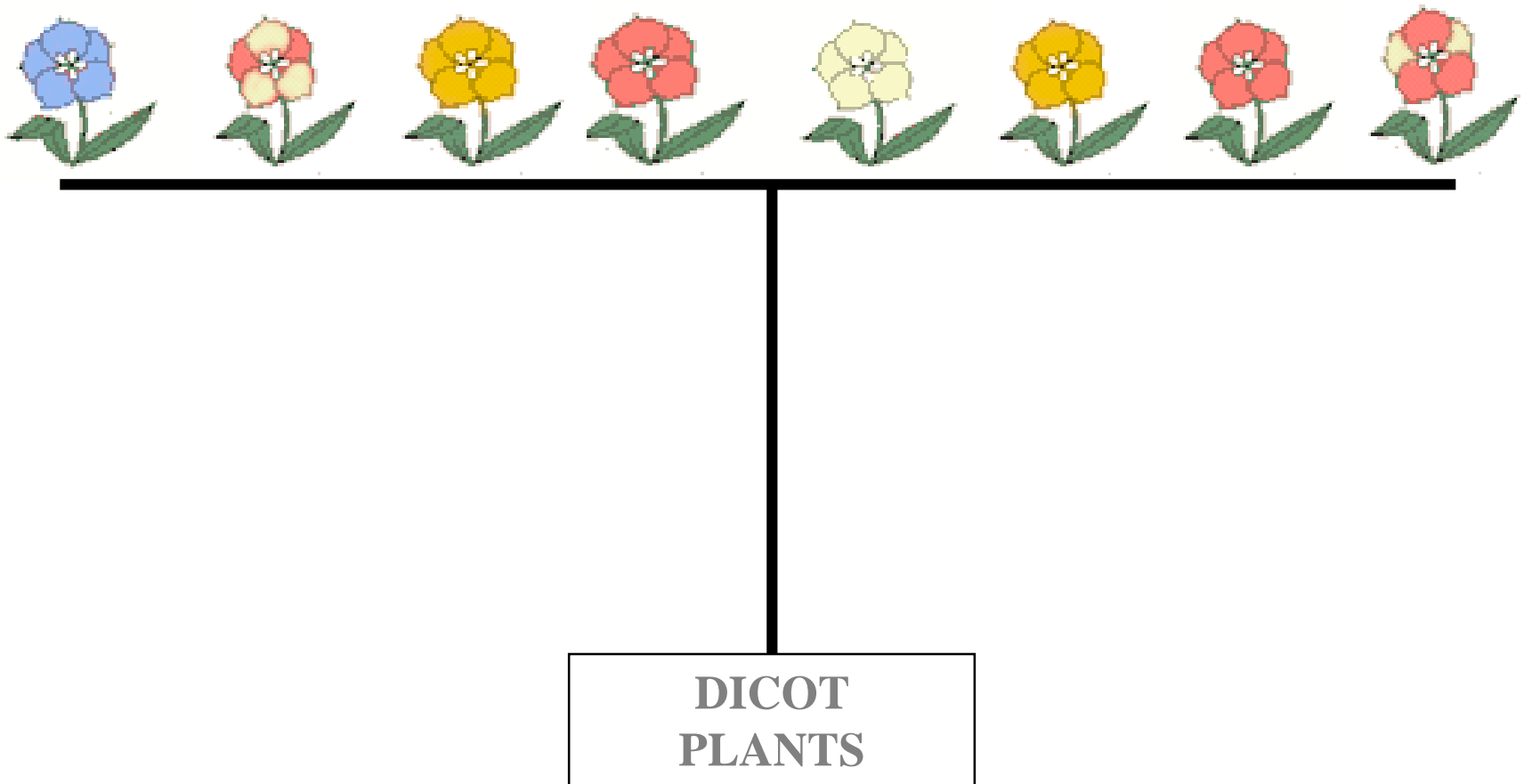


CHARACTER CONVERGENCE ACCEPTED

CONVERGENT EVOLUTION ACCEPTED

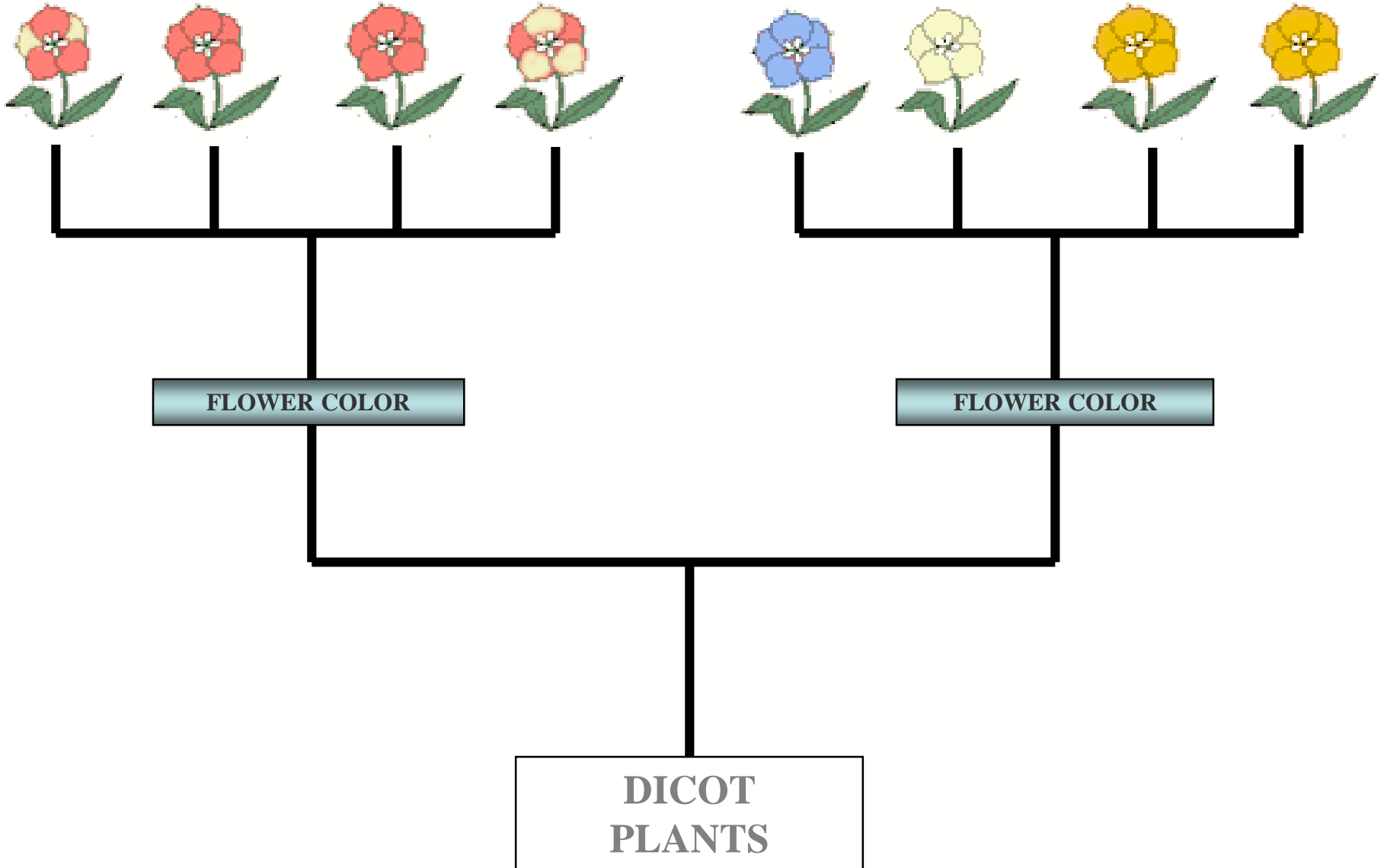
PHENETIC NATURAL CLASSIFICATION

PHENETIC CLASSIFICATION

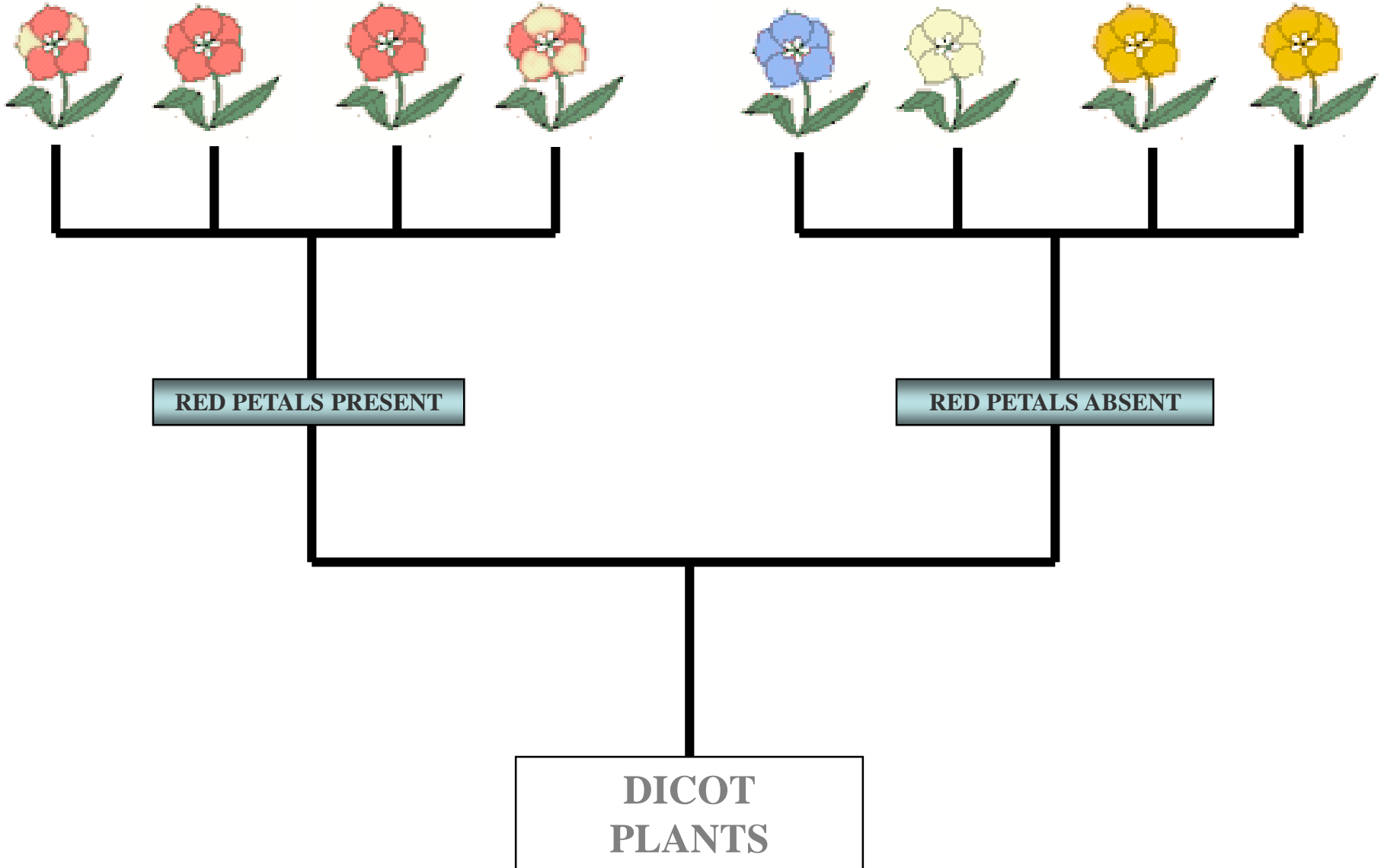


PHENETIC CLASSIFICATION

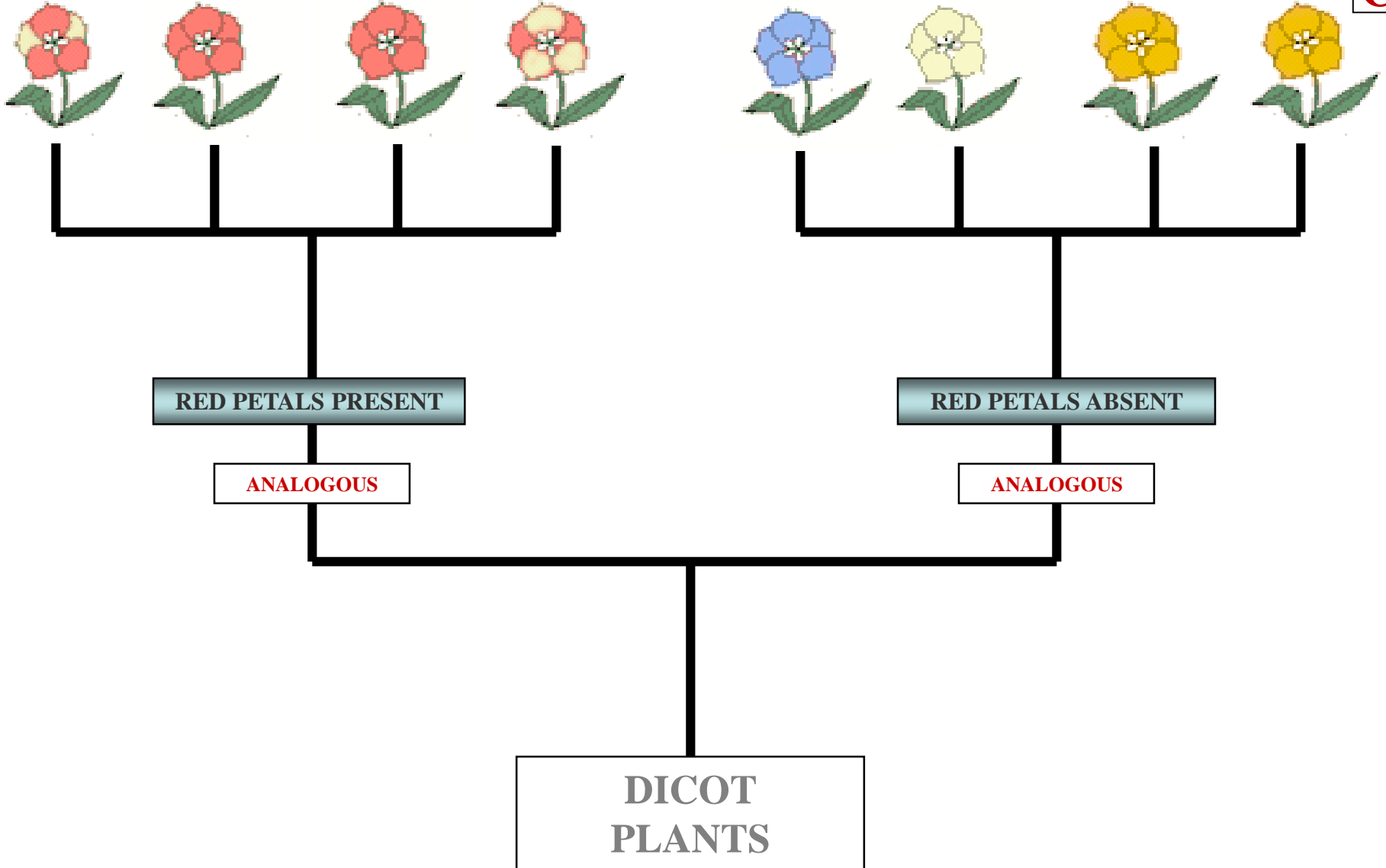
R



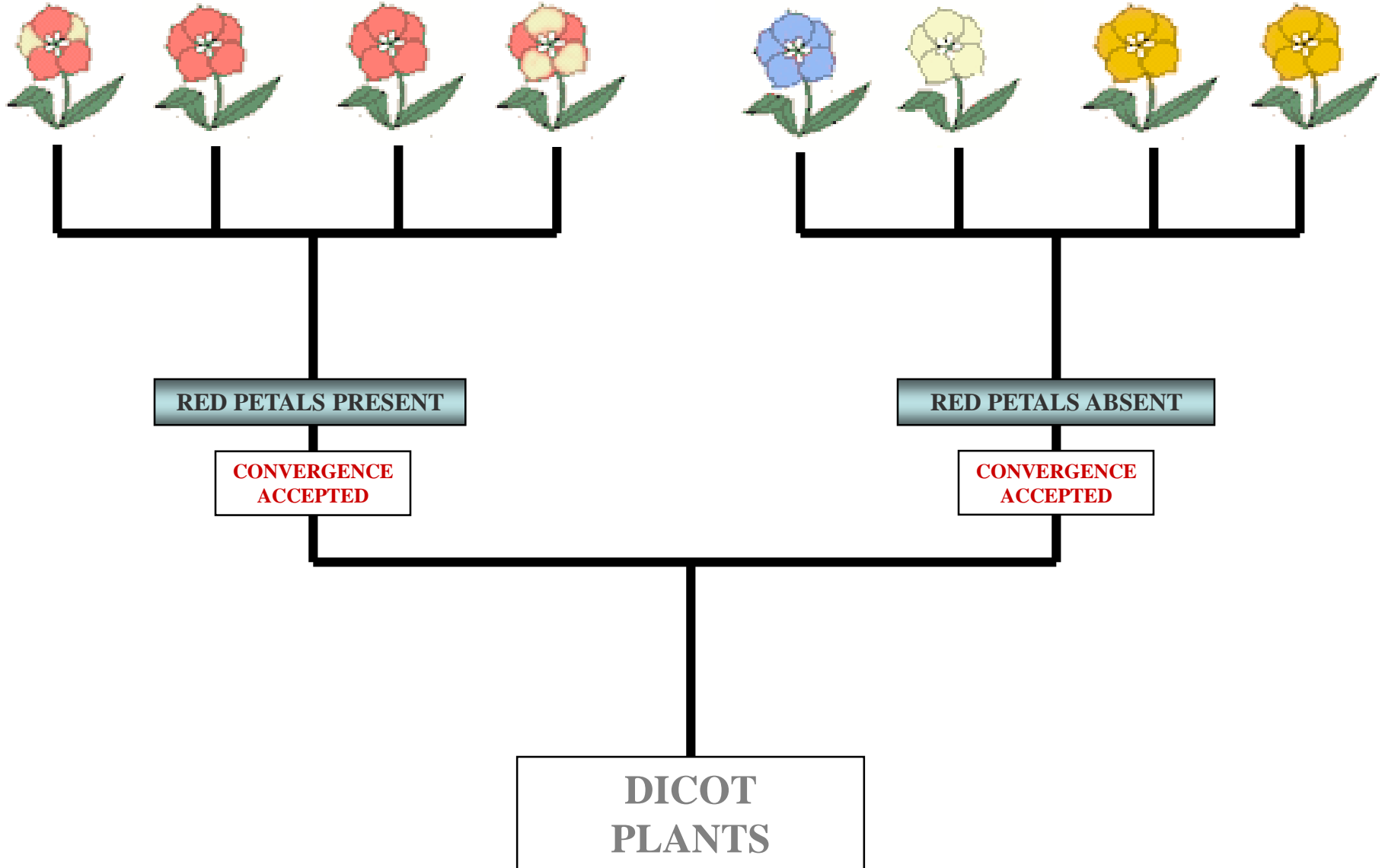
PHENETIC CLASSIFICATION



PHENETIC CLASSIFICATION



PHENETIC CLASSIFICATION





OVARY
POSITION

OVARY
POSITION

OVARY
POSITION

OVARY
POSITION

OVARY
POSITION

OVARY
POSITION

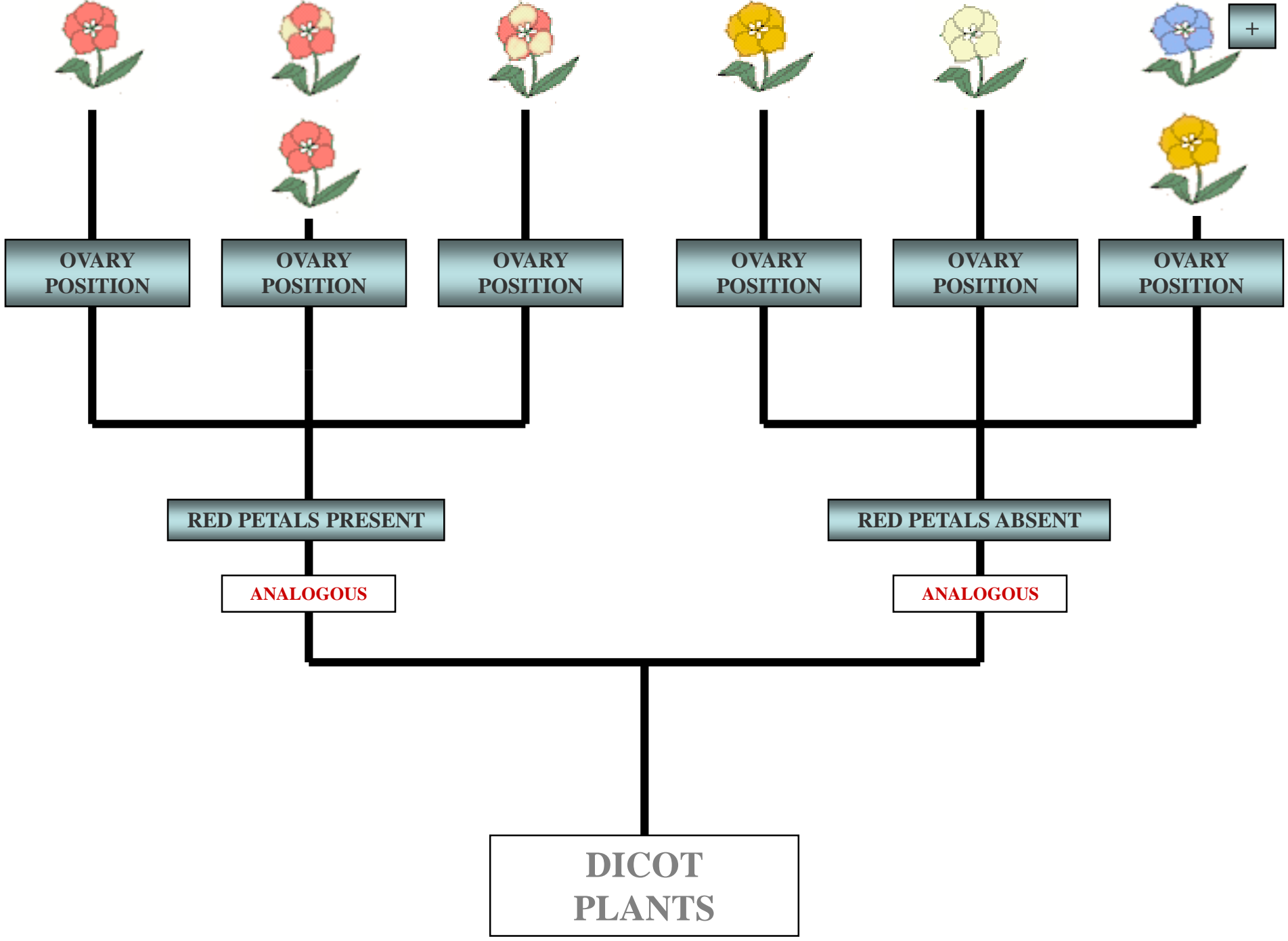
RED PETALS PRESENT

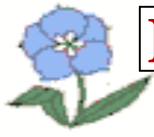
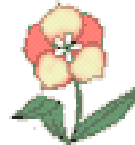
RED PETALS ABSENT

ANALOGOUS

ANALOGOUS

DICOT
PLANTS





HYOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

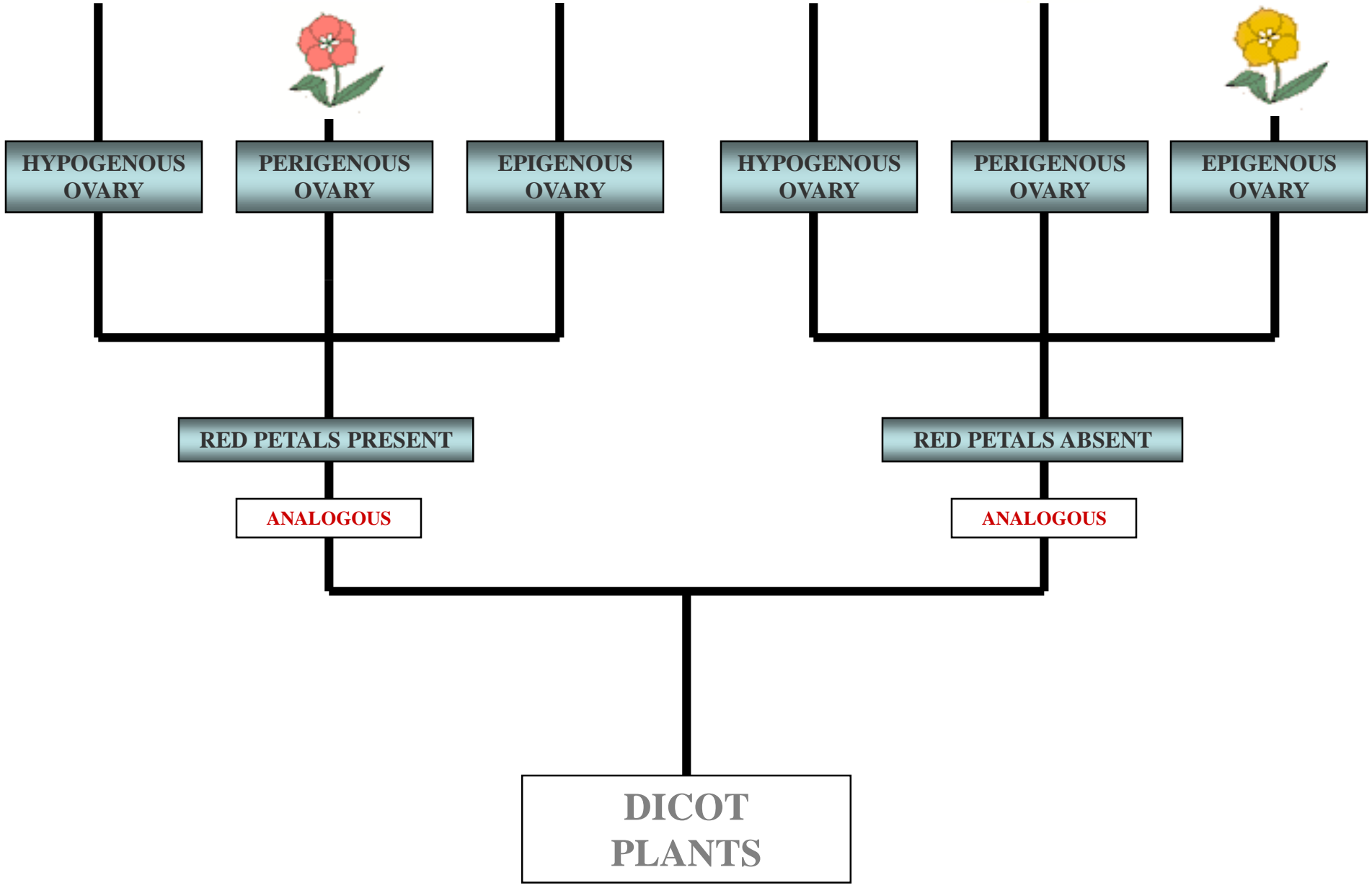
RED PETALS PRESENT

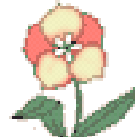
RED PETALS ABSENT

ANALOGOUS

ANALOGOUS

DICOT
PLANTS





HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

RED PETALS PRESENT

RED PETALS ABSENT

ANALOGOUS

ANALOGOUS

DICOT
PLANTS



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

RED PETALS PRESENT

RED PETALS ABSENT

ANALOGOUS

ANALOGOUS

**PHENETIC
CLASSIFICATION**

USES BOTH ANALOGOUS & HOMOLOGOUS CHARCTERS

**DICOT
PLANTS**

PHENETIC DENDROGRAM

PHENETIC DENDROGRAM



PHENETIC DENDROGRAM

TREE-LIKE ILLUSTRATION

PHENETIC DENDROGRAM

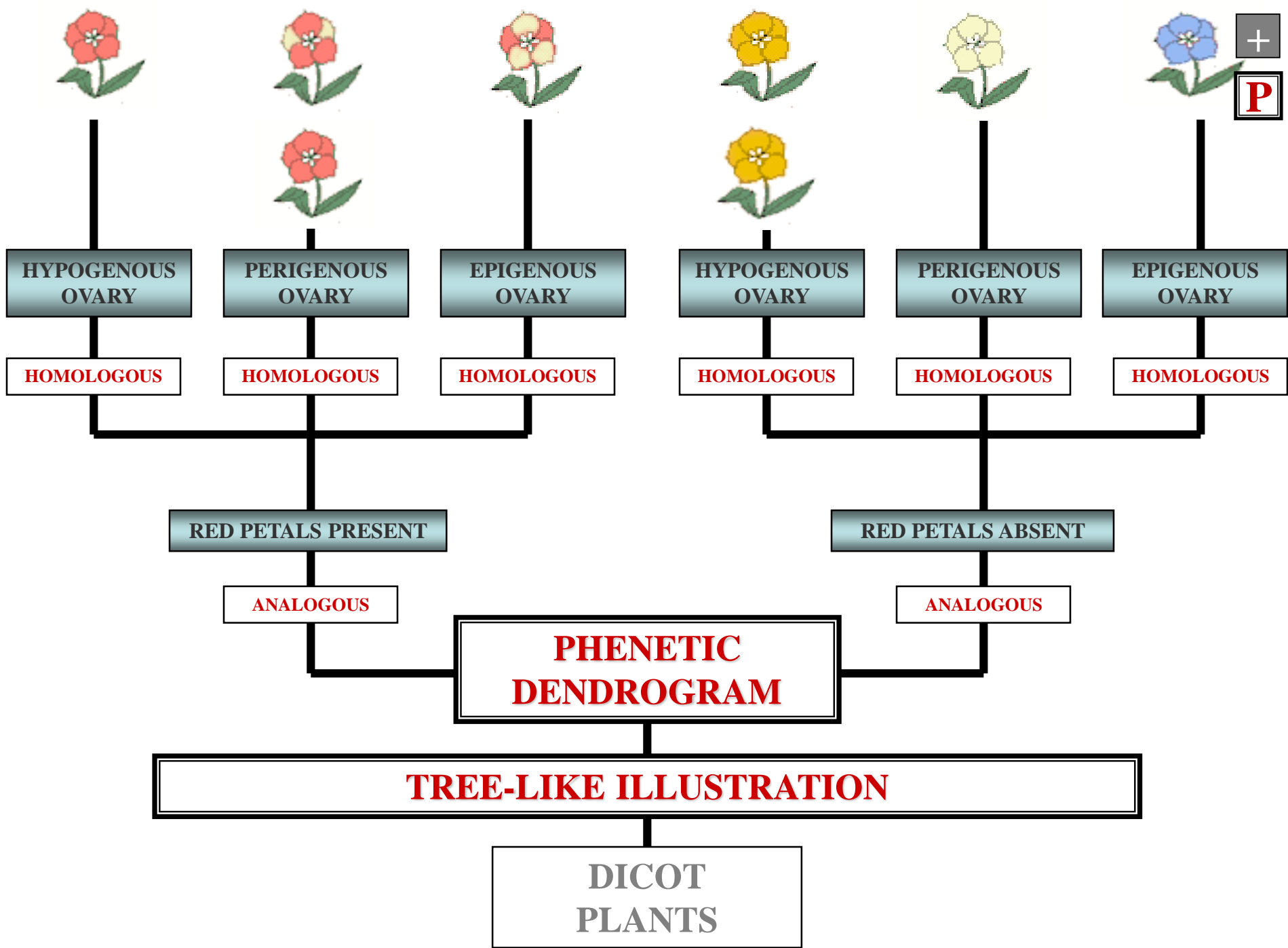
PHENETIC DENDROGRAM



TREE-LIKE ILLUSTRATION

REPRESENTING
PHENETIC CLASSIFICATION

PHENETIC DENDROGRAM





**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

RED PETALS PRESENT

RED PETALS ABSENT

ANALOGOUS

ANALOGOUS

**PHENETIC
DENDROGRAM**

PHENETIC CLASSIFICATION

**DICOT
PLANTS**

**PHENETIC
DENDROGRAM
TYPE**

PHENOGRAM

PHENOGRAM DENDROGRAM








GENERATED FROM DATA
MATRIX VIA COMPUTER

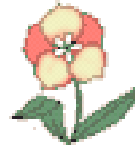
PHENOGRAM
DENDROGRAM

DATA MATRIX



PLT-TAXON	CH-1	CH-2	CH-3	CH-4	CH-5
PLT-TAXON- 	+	+	+	+	+
PLT-TAXON- 	+	+	+	+	-
PLT-TAXON- 	+	+	+	-	-
PLT-TAXON- 	+	+	-	-	-
PLT-TAXON- 	+	-	-	-	-

+ = CHARACTER PRESENT



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

RED PETALS PRESENT

RED PETALS ABSENT

PHENOGRAM

GENERATED FROM DATA MATRIX VIA COMPUTER

DICOT
PLANTS

PHENOGRAM DENDROGRAM



PROXIMITY
=
GREATER SIMILARITY

PHENOGRAM DENDROGRAM



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

RED PETALS PRESENT

RED PETALS ABSENT

PHENOGRAM

PROXIMITY = GREATER SIMILARITY

DICOT
PLANTS

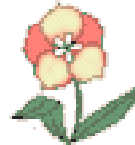
PHENOGRAM DENDROGRAM



SET TAXONOMIC LIMITS

PHENOGRAM
DENDROGRAM

F



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

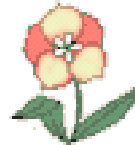
RED PETALS PRESENT

RED PETALS ABSENT

PHENOGRAM

SET TAXONOMIC LIMITS

DICOT
PLANTS



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

RED PETALS PRESENT

RED PETALS ABSENT

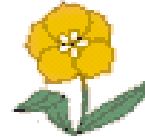
FAMILY

FAMILY

PHENOGRAM

SET TAXONOMIC LIMITS

DICOT
PLANTS



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

RED PETALS ABSENT

FAMILY

FAMILY

PHENOGRAM

SET TAXONOMIC LIMITS

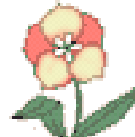
**DICOT
PLANTS**



**PHENETIC
CLASSIFICATION
ADVANTAGES
&
DISADVANTAGES**



PHENETIC CLASSIFICATION ADVANTAGES



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

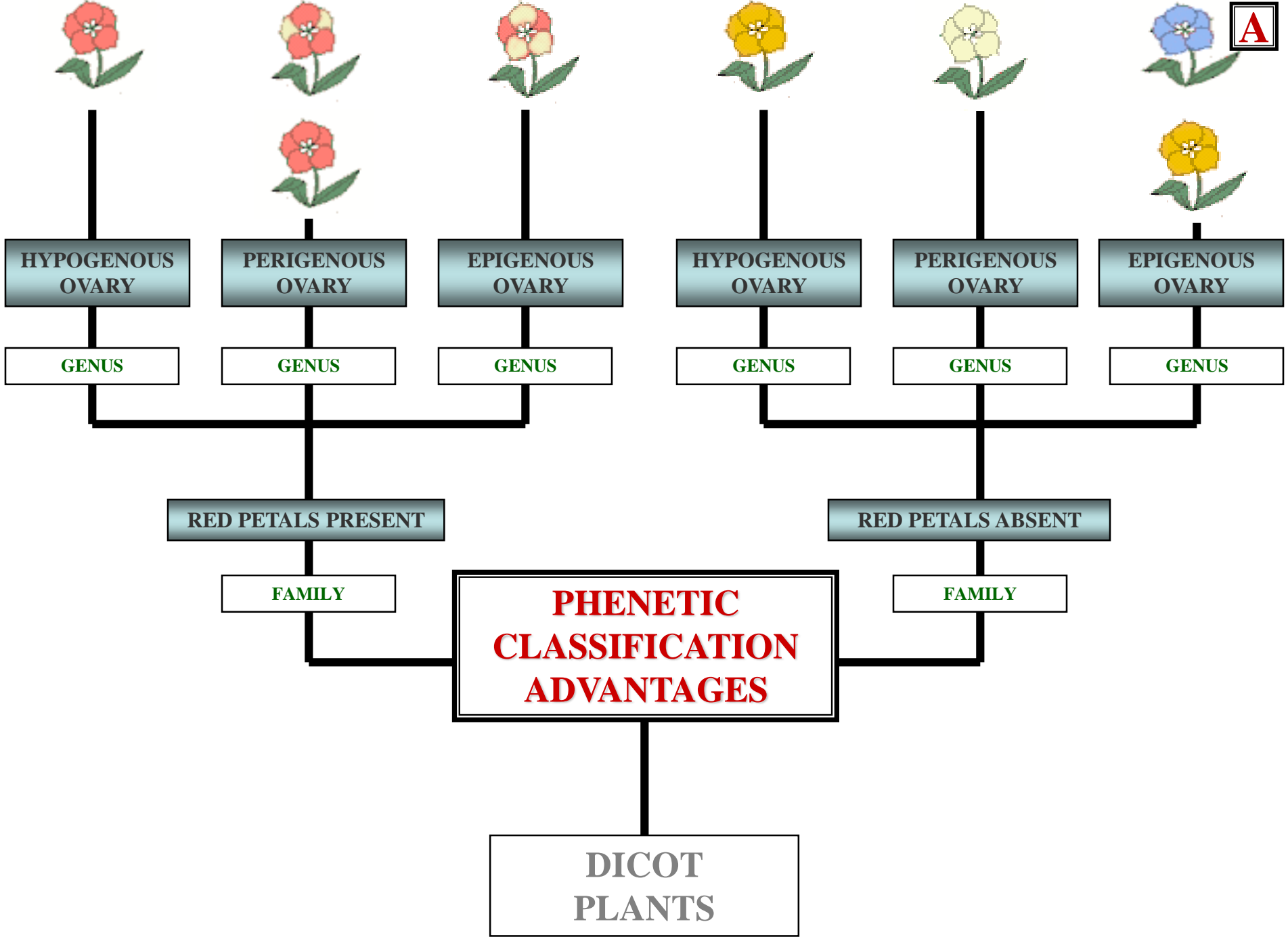
RED PETALS ABSENT

FAMILY

FAMILY

**PHENETIC
CLASSIFICATION
ADVANTAGES**

DICOT
PLANTS





HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

RED PETALS ABSENT

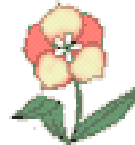
FAMILY

FAMILY

**PHENETIC
CLASSIFICATION
ADVANTAGES**

ALL CHARACTERS EQUALLY SALIENT

DICOT
PLANTS



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

RED PETALS ABSENT

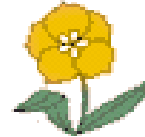
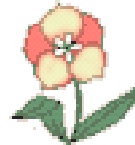
FAMILY

FAMILY

**PHENETIC
CLASSIFICATION
ADVANTAGES**

SUBJECTIVE CHARACTER BIAS ELIMINATED

DICOT
PLANTS



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

RED PETALS ABSENT

FAMILY

FAMILY

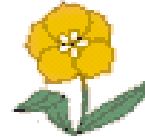
**PHENETIC
CLASSIFICATION
ADVANTAGES**

OBJECTIVE CLASSIFICATION

**DICOT
PLANTS**



PHENETIC CLASSIFICATION DISADVANTAGES



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

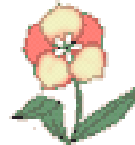
RED PETALS ABSENT

FAMILY

FAMILY

**PHENETIC
CLASSIFICATION
DISADVANTAGES**

DICOT
PLANTS



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

RED PETALS ABSENT

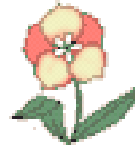
FAMILY

FAMILY

**PHENETIC
CLASSIFICATION
DISADVANTAGES**

USES ANALOGOUS CHARACTERS

DICOT
PLANTS



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

RED PETALS ABSENT

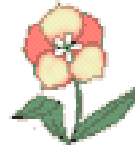
FAMILY

FAMILY

**PHENETIC
CLASSIFICATION
DISADVANTAGES**

CHARACTER CONVERGENCE ACCEPTED

DICOT
PLANTS



HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

HYPOGENOUS
OVARY

PERIGENOUS
OVARY

EPIGENOUS
OVARY

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

RED PETALS PRESENT

RED PETALS ABSENT

FAMILY

FAMILY

**PHENETIC
CLASSIFICATION
DISADVANTAGES**

DOES NOT REFLECT PHYLOGENY

DICOT
PLANTS

**PHYLOGENETIC
NATURAL
CLASSIFICATION**

**PHYLOGENETIC
NATURAL
CLASSIFICATION**



PHYLOGENETIC NATURAL CLASSIFICATION

**BASED ON CHARACTER
ANCESTRAL DESENT**

**PHYLOGENETIC NATURAL
CLASSIFICATION**

PHYLOGENETIC NATURAL CLASSIFICATION



ATTEMPT REFLECT PHYLOGENY

PHYLOGENETIC NATURAL CLASSIFICATION

PHYLOGENETIC NATURAL CLASSIFICATION



ATTEMPT REFLECT PHYLOGENY

NO ATTEMPT REFLECT OVERALL
SIMILARITY

PHYLOGENETIC NATURAL CLASSIFICATION

PHYLOGENETIC NATURAL CLASSIFICATION



ATTEMPT REFLECT PHYLOGENY

NO ATTEMPT REFLECT OVERALL
SIMILARITY

SALIENT PHYLOGENETIC CHARACTERS
ARE SELECTED

PHYLOGENETIC NATURAL CLASSIFICATION

PHYLOGENETIC NATURAL CLASSIFICATION



SALIENT CHARACTERS GIVEN GREATER
WEIGHT

PHYLOGENETIC NATURAL
CLASSIFICATION

PHYLOGENETIC NATURAL CLASSIFICATION



SALIENT CHARACTERS GIVEN GREATER
WEIGHT

SUBJECTIVE CHARACTER BIAS INHERENT

PHYLOGENETIC NATURAL CLASSIFICATION

PHYLOGENETIC NATURAL CLASSIFICATION



SALIENT CHARACTERS GIVEN GREATER
WEIGHT

SUBJECTIVE CHARACTER BIAS INHERENT

SUBJECTIVE CLASSIFICATION

PHYLOGENETIC NATURAL CLASSIFICATION

PHYLOGENETIC NATURAL CLASSIFICATION



USES HOMOLOGOUS CHARACTERS ONLY

PHYLOGENETIC NATURAL CLASSIFICATION

PHYLOGENETIC NATURAL CLASSIFICATION



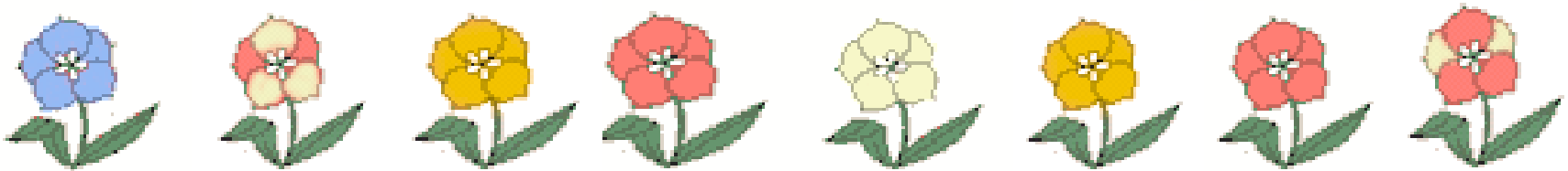
USES HOMOLOGOUS CHARACTERS ONLY

CHARACTER CONVERGENCE
NOT ACCEPTED

**CONVERGENT EVOLUTION
NOT ACCEPTED**

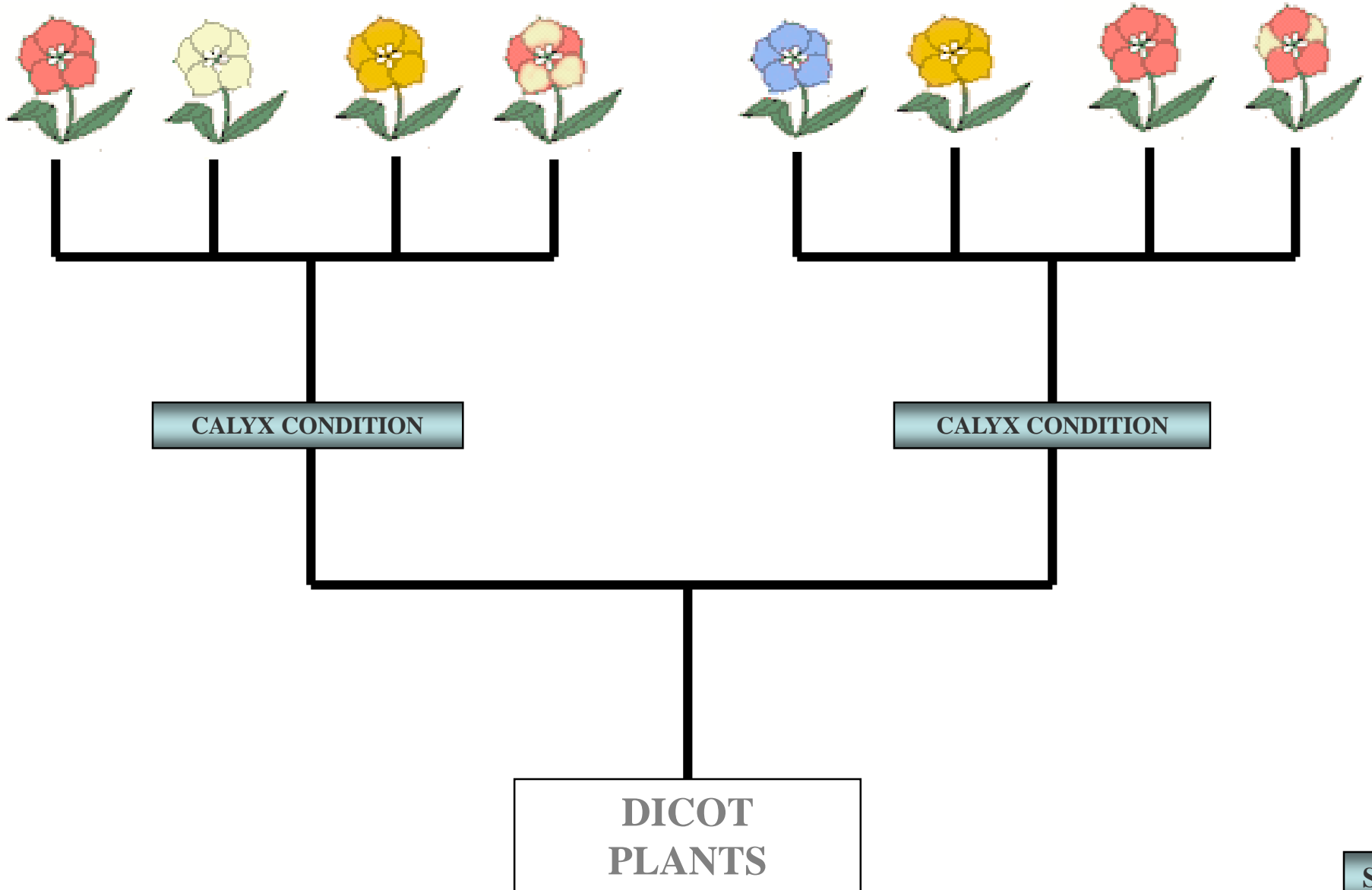
PHYLOGENETIC NATURAL
CLASSIFICATION

PHYLOGENETIC CLASSIFICATION

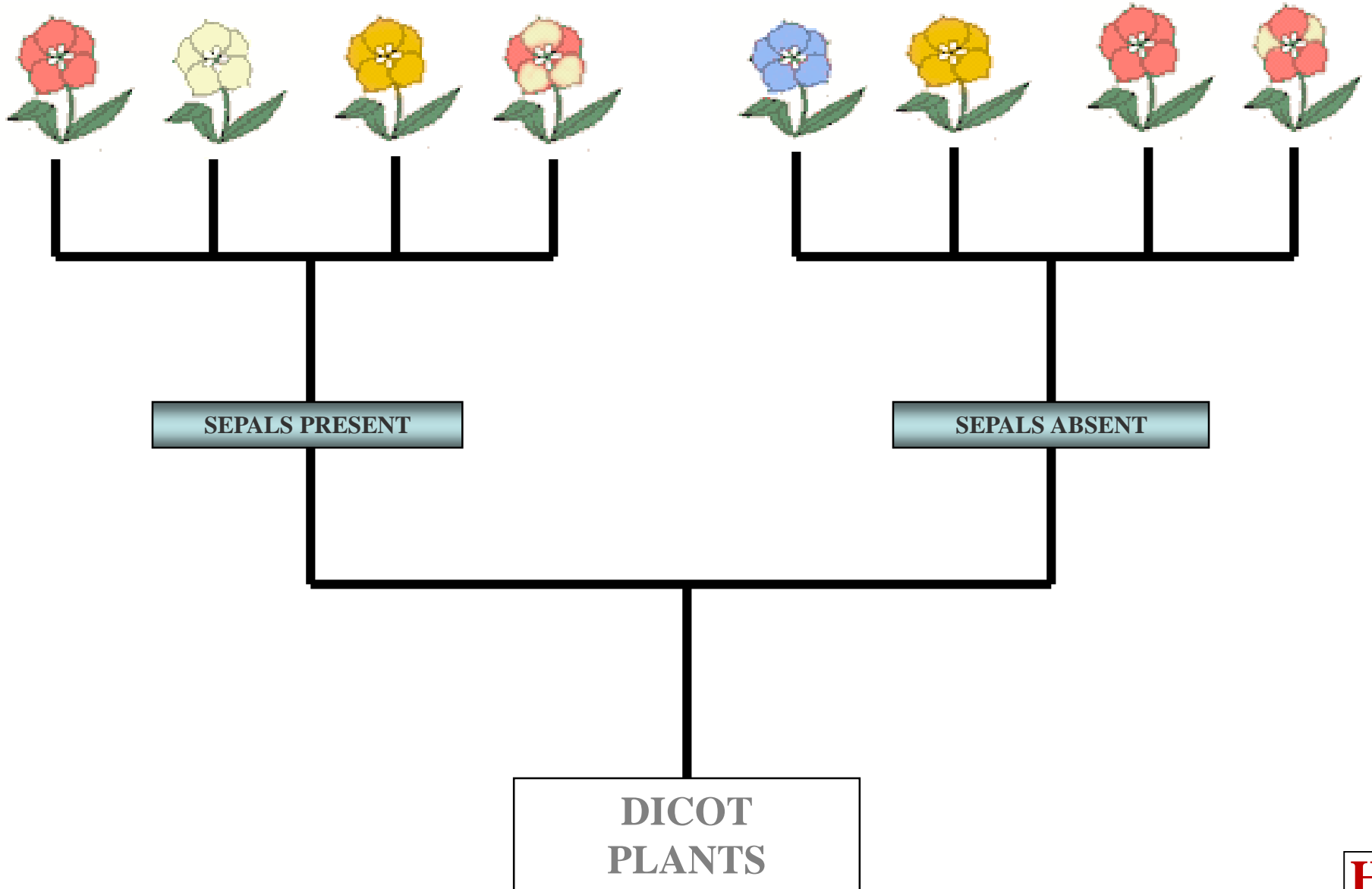


DICOT
PLANTS

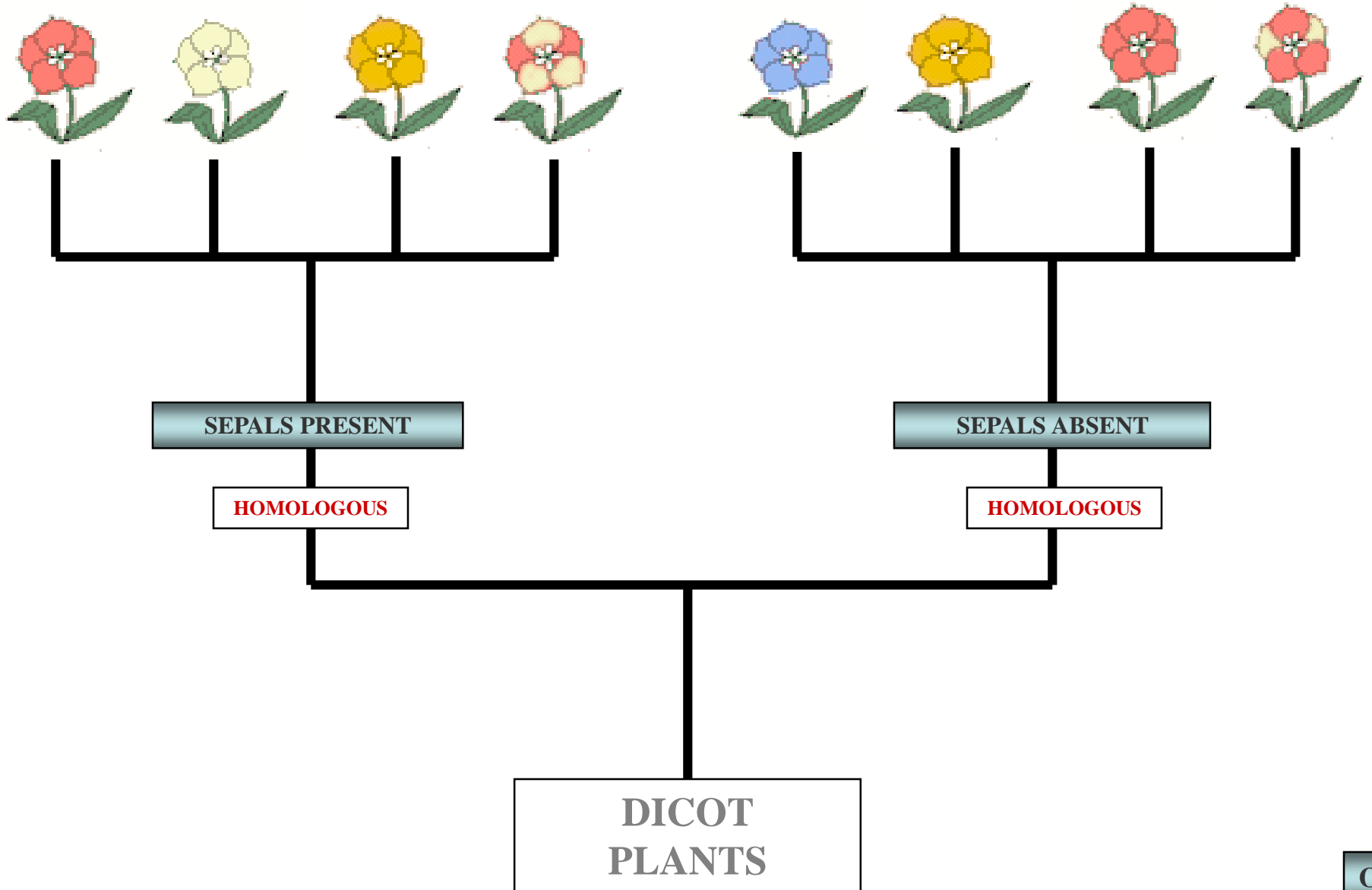
PHYLOGENETIC CLASSIFICATION

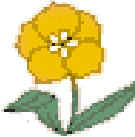


PHYLOGENETIC CLASSIFICATION



PHYLOGENETIC CLASSIFICATION





OVARY
POSITION

OVARY
POSITION

OVARY
POSITION

OVARY
POSITION

OVARY
POSITION

OVARY
POSITION

SEPALS PRESENT

SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

DICOT
PLANTS





**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

SEPALS PRESENT

SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

**DICOT
PLANTS**



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALS PRESENT

SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

**DICOT
PLANTS**



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALS PRESENT

SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENETIC
CLASSIFICATION**

USES HOMOLOGOUS CHARACTERS ONLY

**DICOT
PLANTS**

PHYLOGENETIC DENDROGRAMS

PHYLOGENETIC DENDROGRAM

PHYLOGENETIC DENDROGRAM



TREE-LIKE ILLUSTRATION

PHYLOGENETIC
DENDROGRAM

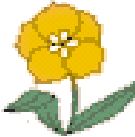
PHYLOGENETIC DENDROGRAM



TREE-LIKE ILLUSTRATION

REPRESENTING
PHYLOGENETIC CLASSIFICATION

PHYLOGENETIC DENDROGRAM



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALS PRESENT

SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENETIC
DENDROGRAM**

TREE-LIKE ILLUSTRATION

**DICOT
PLANTS**



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALS PRESENT

SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENETIC
DENDROGRAM**

PHYLOGENETIC CLASSIFICATION

**DICOT
PLANTS**

PHYLOGENETIC DENDROGRAMS TYPES



PHYLOGENETIC DENDROGRAM TYPES

PHYLOGRAM

PHYLOGENETIC DENDROGRAM TYPES



PHYLOGENETIC DENDROGRAM TYPES

**PHYLOGRAM
CLADOGRAM**

PHYLOGENETIC DENDROGRAM TYPES



**PHYLOGENETIC
CLASSIFICATION
ADVANTAGES
&
DISADVANTAGES**



PHYLOGENETIC CLASSIFICATION DISADVANTAGES



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALS PRESENT

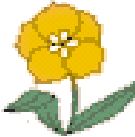
SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENTIC
CLASSIFICATION
DISADVANTAGES**

**DICOT
PLANTS**



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALS PRESENT

SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENETIC
CLASSIFICATION
DISADVANTAGES**

SALIENT CHARACTERS GIVEN GREATER WEIGHT

**DICOT
PLANTS**



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALS PRESENT

SEPALS ABSENT

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENTIC
CLASSIFICATION
DISADVANTAGES**

SUBJECTIVE CHARACTER BIAS INHERENT

**DICOT
PLANTS**



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALS PRESENT

SEPALS ABSENT

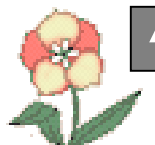
HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENTIC
CLASSIFICATION
DISADVANTAGES**

SUBJECTIVE CLASSIFICATION

**DICOT
PLANTS**



STAMENS
FOUR

STAMENS
FOUR

STAMENS
FOUR

STAMENS
SIX

STAMENS
SIX

STAMENS
SIX

GENUS

GENUS

GENUS

GENUS

GENUS

GENUS

CALX FUSED

CALY NON-FUSED

FAMILY

FAMILY

**PHYLOGENETIC
CLASSIFICATION
DISADVANTAGES**

SUBJECTIVE CLASSIFICATION

DICOT
PLANTS



PHYLOGENETIC CLASSIFICATION ADVANTAGES



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALOUS

ASEPALOUS

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENTIC
CLASSIFICATION
ADVANTAGES**

**DICOT
PLANTS**



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALOUS

ASEPALOUS

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENTIC
CLASSIFICATION
ADVANTAGES**

USES HOMOLGOUS CHARACTERS ONLY

**DICOT
PLANTS**



**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALOUS

ASEPALOUS

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENTIC
CLASSIFICATION
ADVANTAGES**

CHARACTER CONVERGENCE NOT ACCEPTED

**DICOT
PLANTS**



?

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

**HYPOGENOUS
OVARY**

**PERIGENOUS
OVARY**

**EPIGENOUS
OVARY**

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

HOMOLOGOUS

SEPALOUS

ASEPALOUS

HOMOLOGOUS

HOMOLOGOUS

**PHYLOGENTIC
CLASSIFICATION
ADVANTAGES**

DOES REFLECT PHYLOGENY

**DICOT
PLANTS**



QUESTION

BOTANISTS PREFER

PHENETIC

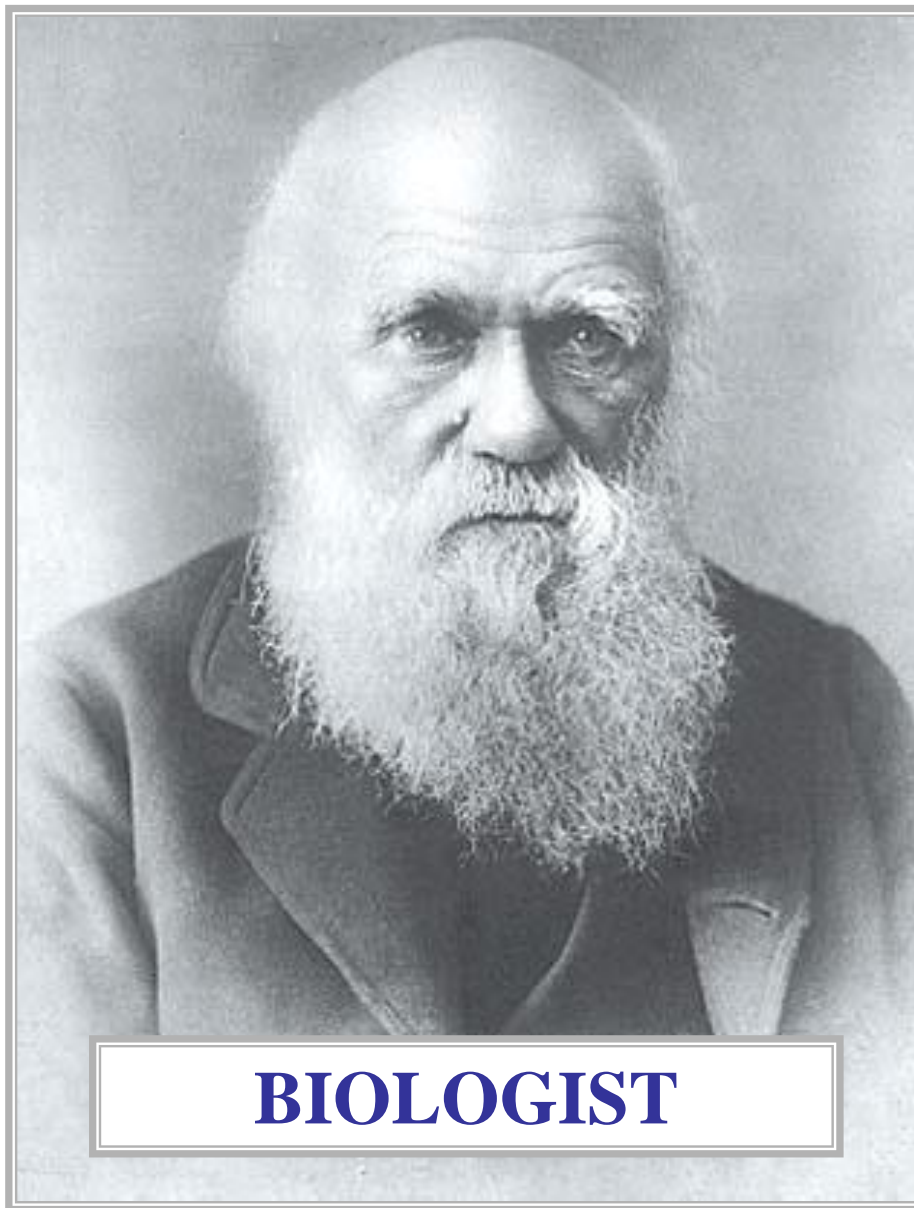
CLASSIFICATION

OR

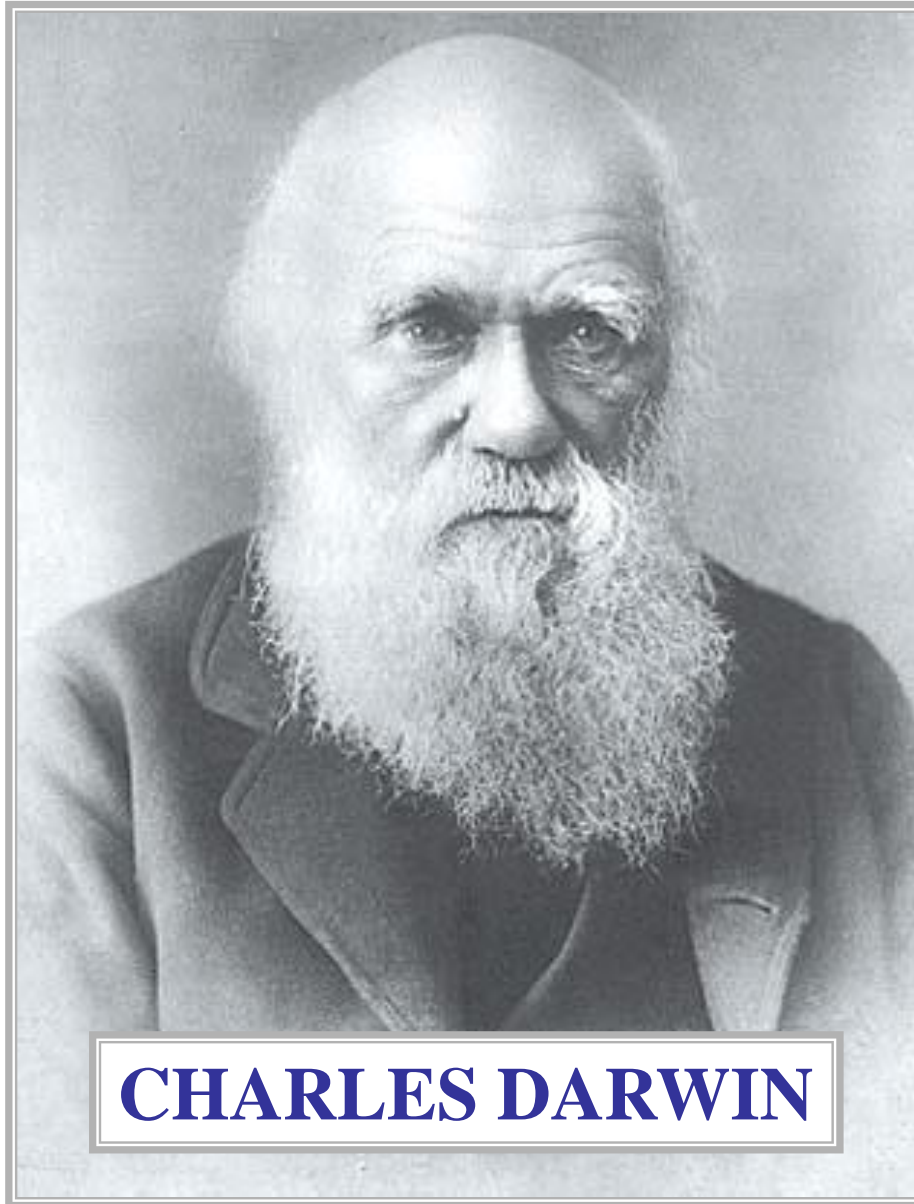
PHYLOGENETIC

CLASSIFICATION?

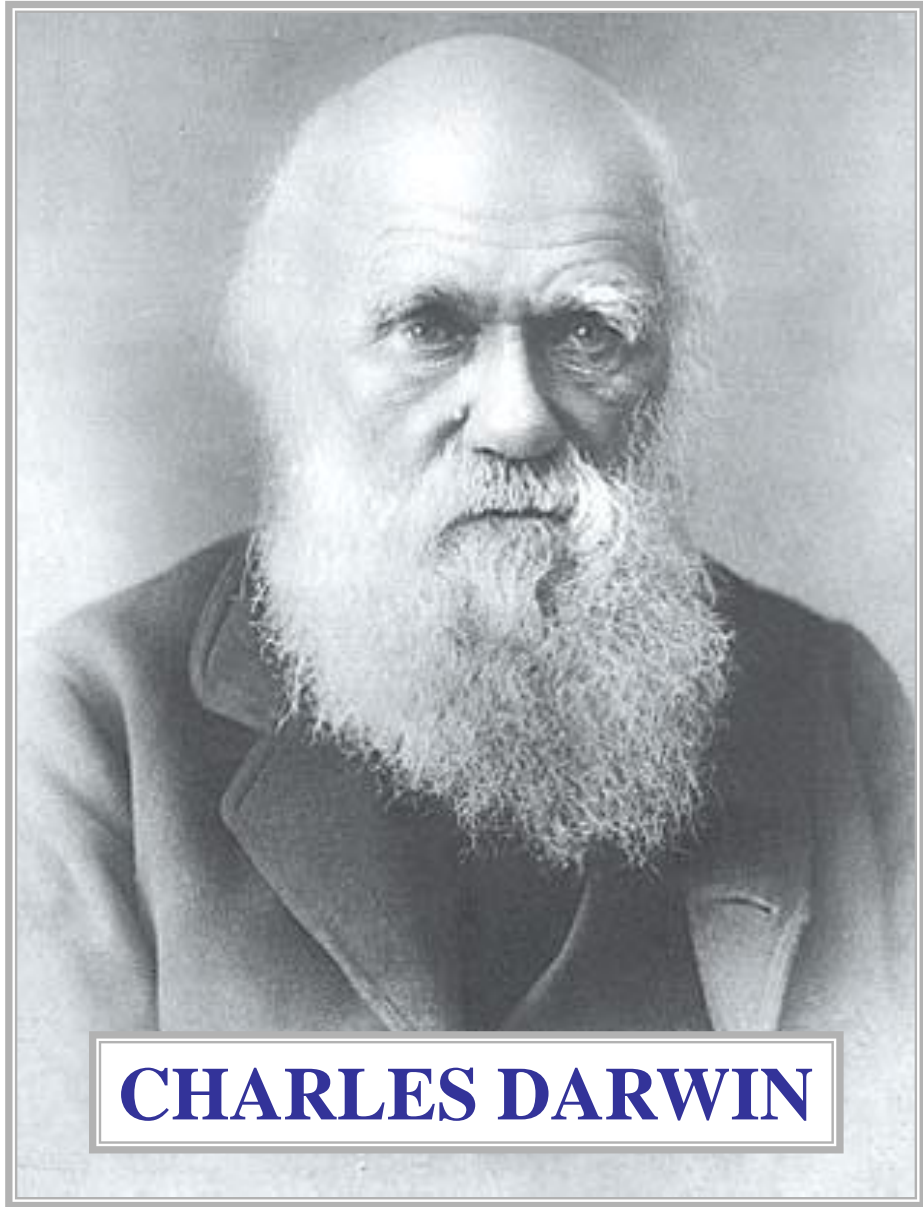
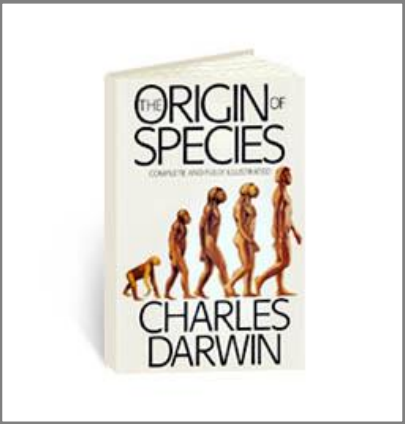
QUESTION



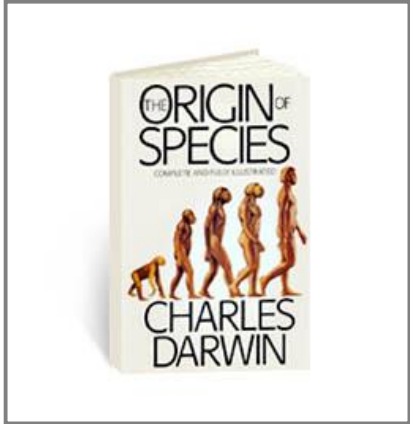
BIOLOGIST

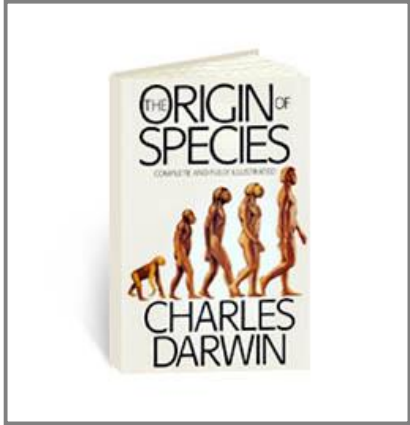
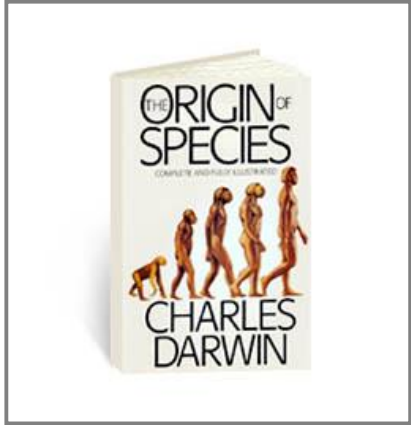
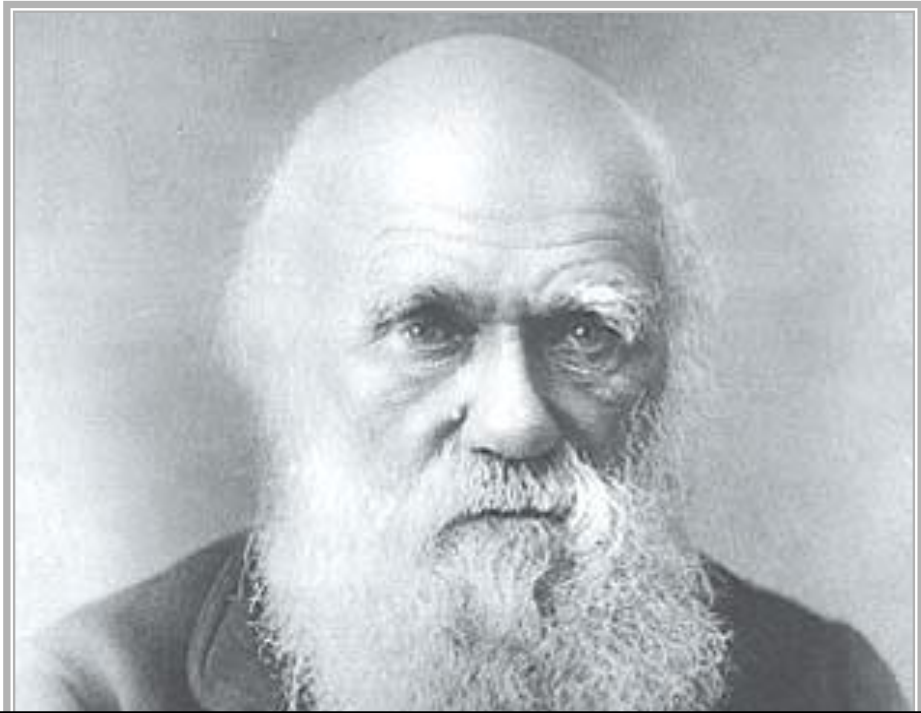


CHARLES DARWIN



CHARLES DARWIN

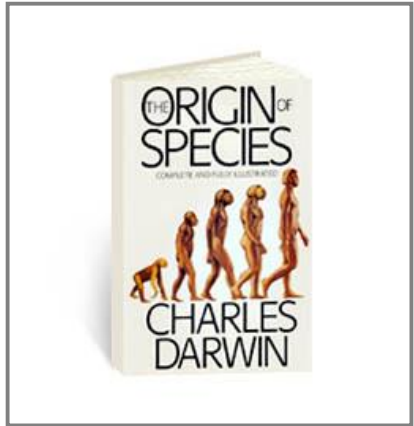
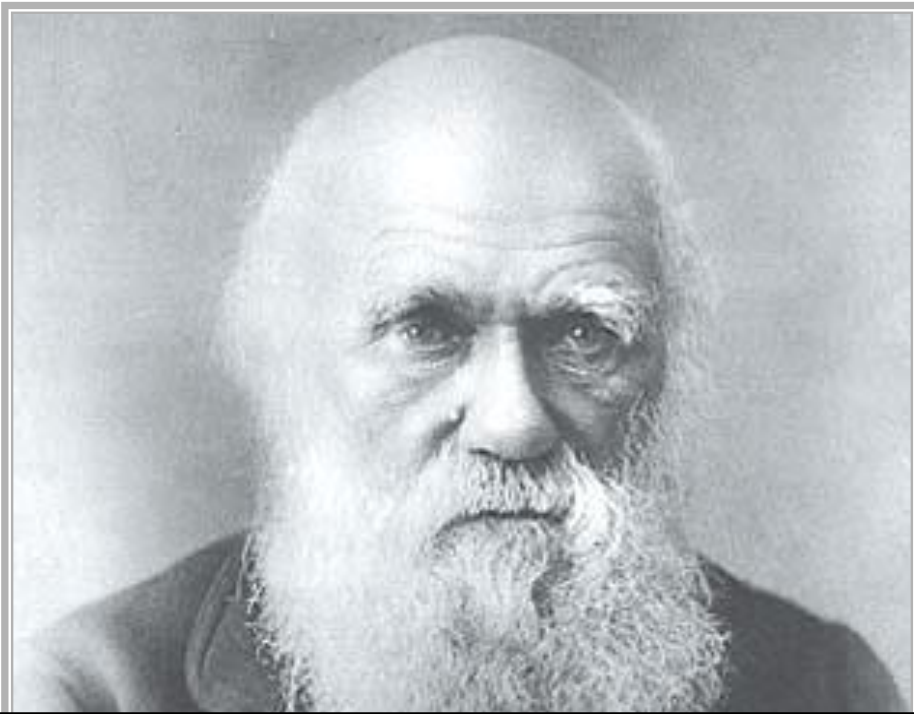
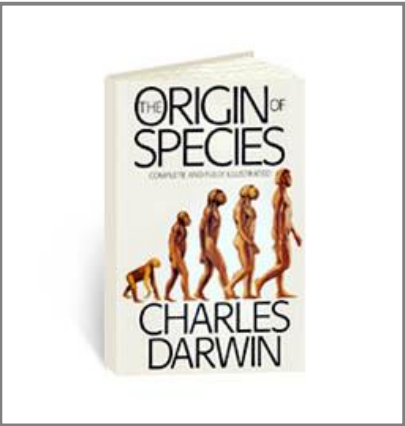




NATURAL SELECTION



CHARLES DARWIN



EVOLUTION

CHARLES DARWIN



**BOTANISTS
PREFER
PHYLOGENETIC
CLASSIFICATION**



**CLASSICAL
PHYLOGENETIC
CLASSIFICATION
VS
CLADISTIC
PHYLOGENETIC
CLASSIFICATION**



CLASSICAL PHYLOGENETIC CLASSIFICATION

CLASSICAL PHYLOGENETIC CLASSIFICATION



TRADITIONAL PHYLOGENETIC METHOD

CLASSICAL PHYLOGENETIC CLASSIFICATION



CLASSICAL PHYLOGENETIC CLASSIFICATION

TRADITIONAL PHYLOGENETIC METHOD

PRACTISED BEFORE COMPUTERS

CLASSICAL PHYLOGENETIC CLASSIFICATION



CLASSICAL PHYLOGENETIC CLASSIFICATION

TRADITIONAL PHYLOGENETIC METHOD

PRACTISED BEFORE COMPUTERS






MORE SUBJECTIVE THAN CLADISTICS

CLASSICAL PHYLOGENETIC CLASSIFICATION

DATA MATRIX

DATA MATRIX








PLT-TAXON	CH-1	CH-2	CH-3	CH-4	CH-5
PLT-TAXON- 	+	+	+	+	+
PLT-TAXON- 	+	+	+	+	-
PLT-TAXON- 	+	+	+	-	-
PLT-TAXON- 	+	+	-	-	-
PLT-TAXON- 	+	-	-	-	-

+ = CHARACTER PRESENT

DATA MATRIX








PLT-TAXON	CH-1	CH-2	CH-3	CH-4	CH-5
PLT-TAXON- 	+	+	+	+	+
PLT-TAXON- 	+	+	+	+	-
PLT-TAXON- 	+	+	+	-	-
PLT-TAXON- 	+	+	-	-	-
PLT-TAXON- 	+	-	-	-	-

+ = CHARACTER PRESENT

SELECT FEW SALIENT PHYLOGENETIC CHARACTERS

DATA MATRIX






PLT-TAXON	CH-1	CH-2	CH-3	CH-4	CH-5
PLT-TAXON- 	+	+	+	+	+
PLT-TAXON- 	+	+	+	+	-
PLT-TAXON- 	+	+	+	-	-
PLT-TAXON- 	+	+	-	-	-
PLT-TAXON- 	+	-	-	-	-

+ = CHARACTER PRESENT

SUBJECTIVE CHARACTER BIAS INHERENT

DATA MATRIX



PLT-TAXON	CH-1	CH-2	CH-3	CH-4	CH-5
PLT-TAXON- 	+	+	+	+	+
PLT-TAXON- 	+	+	+	+	-
PLT-TAXON- 	+	+	+	-	-
PLT-TAXON- 	+	+	-	-	-
PLT-TAXON- 	+	-	-	-	-

+ = CHARACTER PRESENT

MUST DETERMINE CORRECT CHARACTER POLARITY