



**NEW FLORA OF
THE BRITISH ISLES**

BEFORE and AFTER

FLORA
OF THE
BRITISH
ISLES

CLAPHAM
TUTIN
WARBURG

CAMBRIDGE UNIVERSITY PRESS

HISTORICALLY IMPORTANT BRITISH FLORAS

HUDSON, W.H. <i>Flora Anglica</i>	3	1762-1798
SMITH, J.E. & SOWERBY, J. <i>English Botany</i>	3	1790-1886 (1892) (Syme)
BABINGTON, C.C. <i>Manual of British Botany</i>	10	1843-1922 (Wilmott)
BENTHAM, G, & HOOKER, J.D. <i>Handbook of the British Flora</i>	8	1858-1924 (Rendle)
HOOKER, J.D. <i>The Student's Flora of the British Islands</i>	3	1870-1884
CLAPHAM, A.R., TUTIN, T.G. & WARBURG. E.F. <i>Flora of the British Isles</i>	3	1952-1987

SILENE BACCIFERA

(*Cucubalus baccifer*)



AIMS

Up to date taxonomy and distributions

User-friendly format, e.g. keys, binding

Objective list of aliens

Selected drawings and photographs

Relatively low cost

MOLECULAR CLASSIFICATION

■ GOOD IDEA

- Not affected by environment
- Not affected by gene expression
- Constant across all life-forms
- Will not change with time

■ BAD IDEA

- Characters are cryptic
- Very expensive
- Dependent on high level of expertise
- Some radical taxonomic changes

AMALGAMATIONS/SEGREGATIONS

LYSIMACHIA

ANAGALLIS

CENTUNCULUS

TRIENTALIS

GLAUX

LYSIMACHIA

GNAPHALIUM

GNAPHALIUM

OMALOTHECA

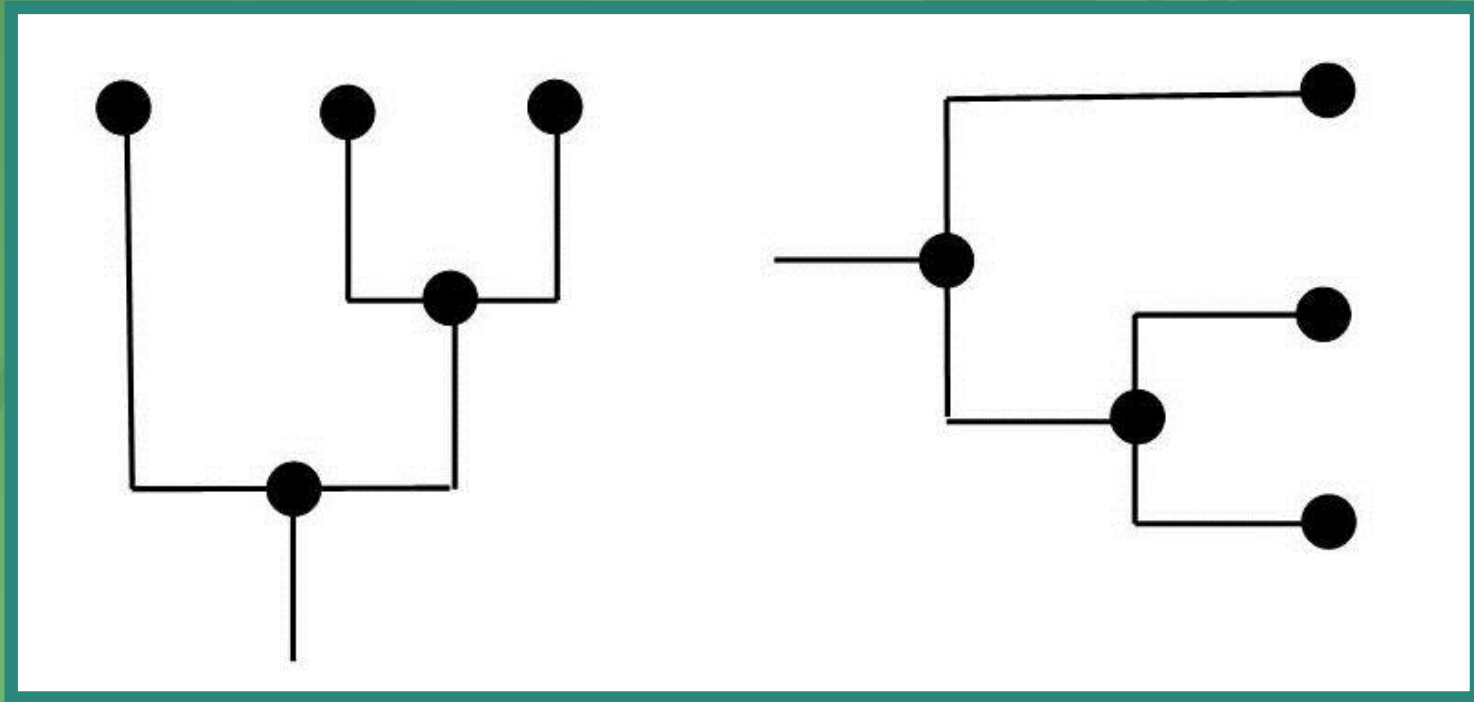
GAMOCHAETA

PSEUDOGNAPHALIUM

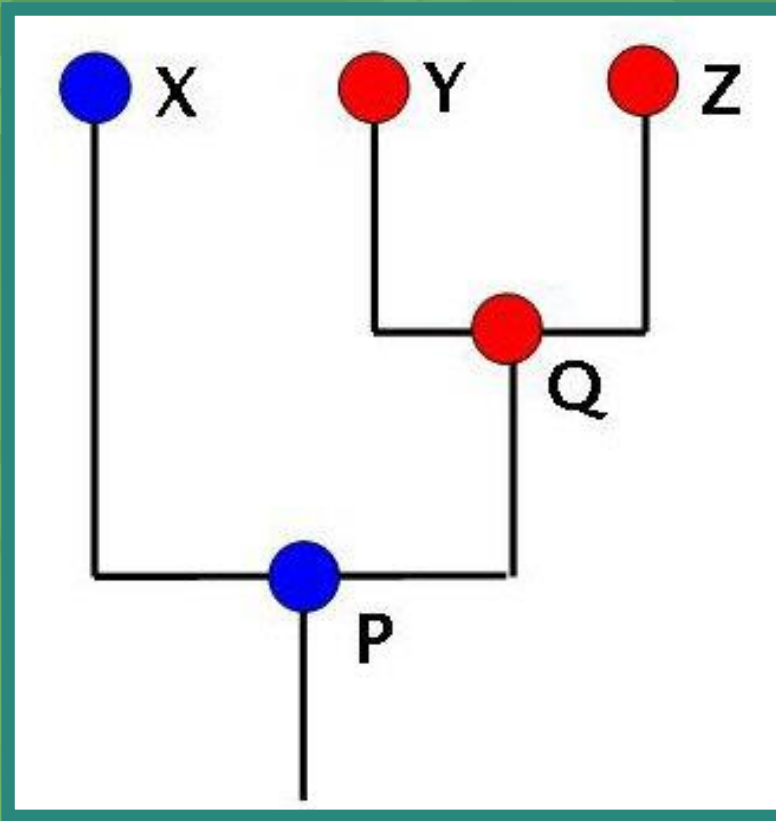
LAPHANGIUM

DATA FROM DNA SEQUENCES

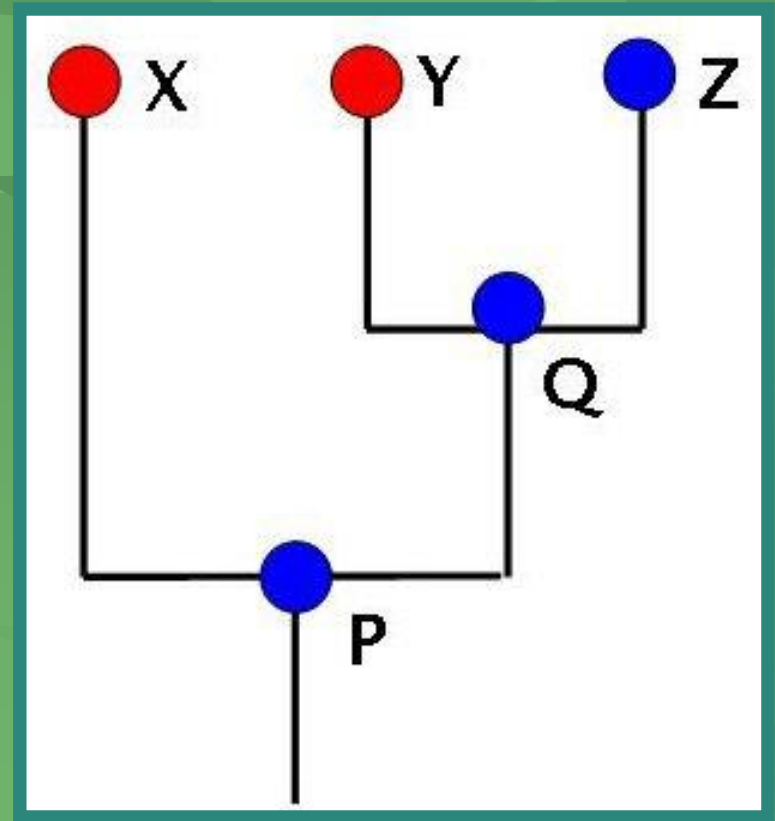
CLADOGRAMS



YZ MONOPHYLETIC



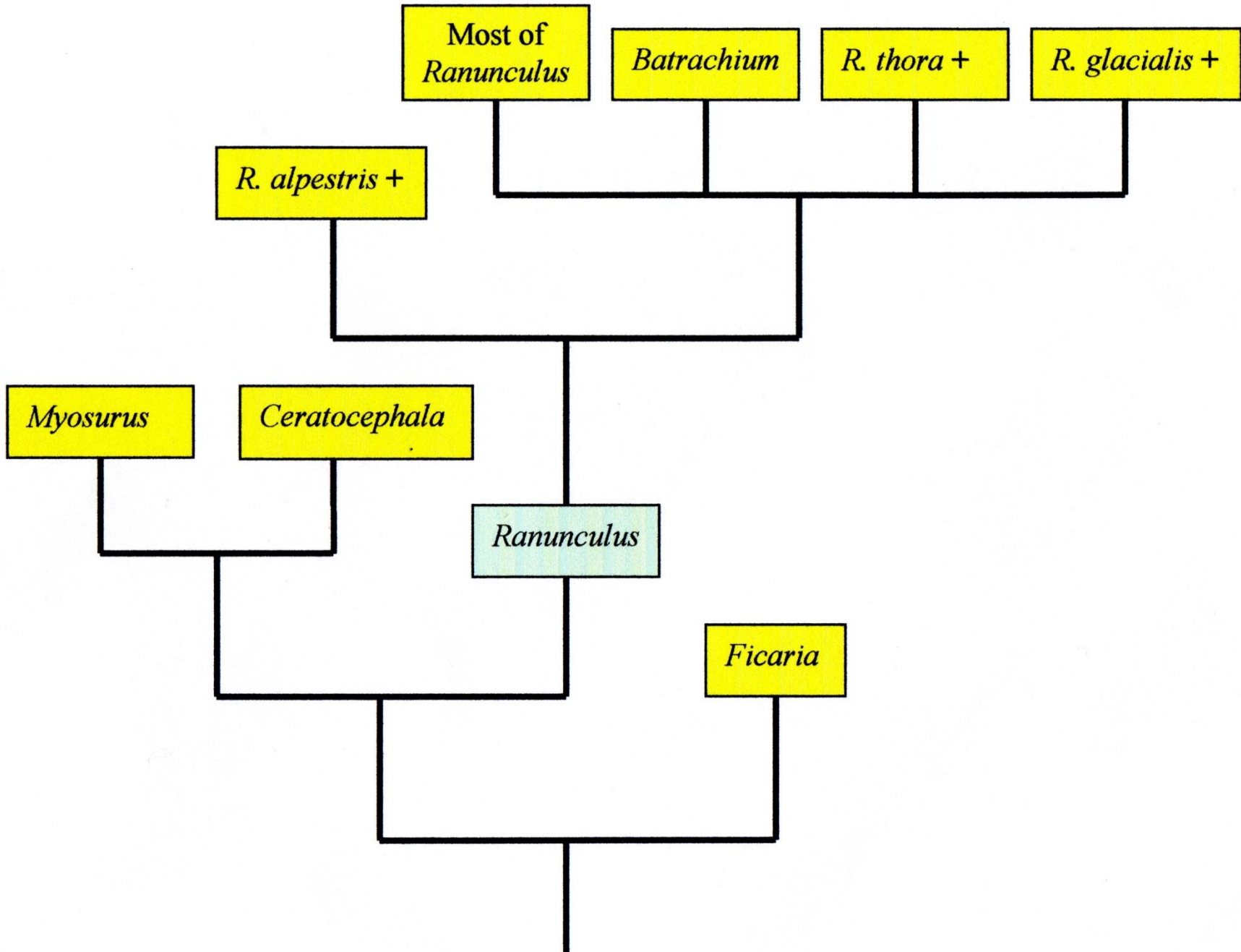
XY POLYPHYLETIC











LIMITATIONS OF MOLECULAR DATA

- **INCONGRUITY**

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- INCONGRUITY
- **'NO DIFFERENCE'**

LIMITATIONS OF MOLECULAR DATA

- INCONGRUITY
- 'NO DIFFERENCE'
- **LEVEL OF DISCRIMINATION**

EQUALLY CORRECT ALTERNATIVES

TYPHACEAE/SPARGANIACEAE

LAMIUM/LAMIASTRUM

BORAGINACEAE/12 FAMILIES

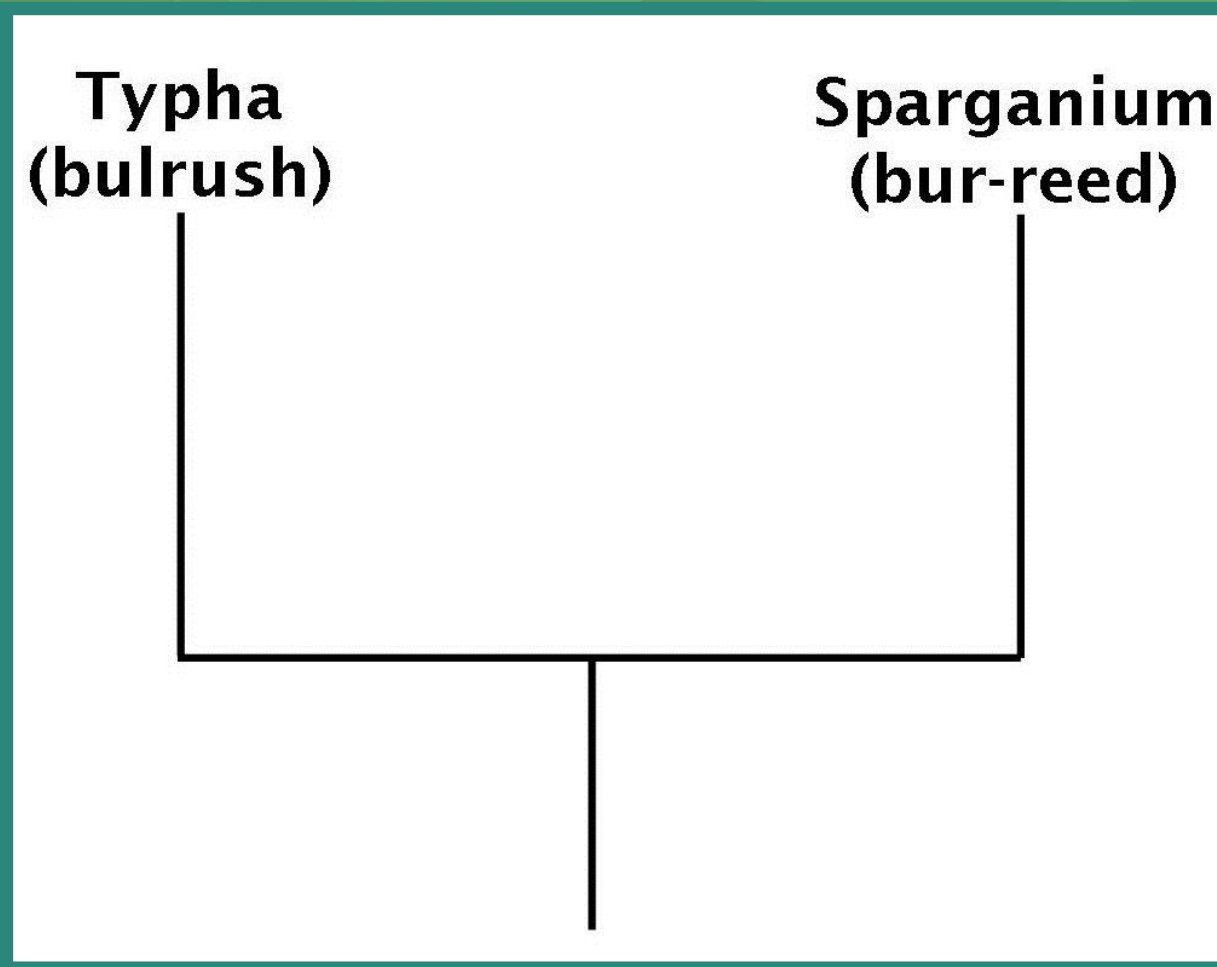
Typha



Sparganium



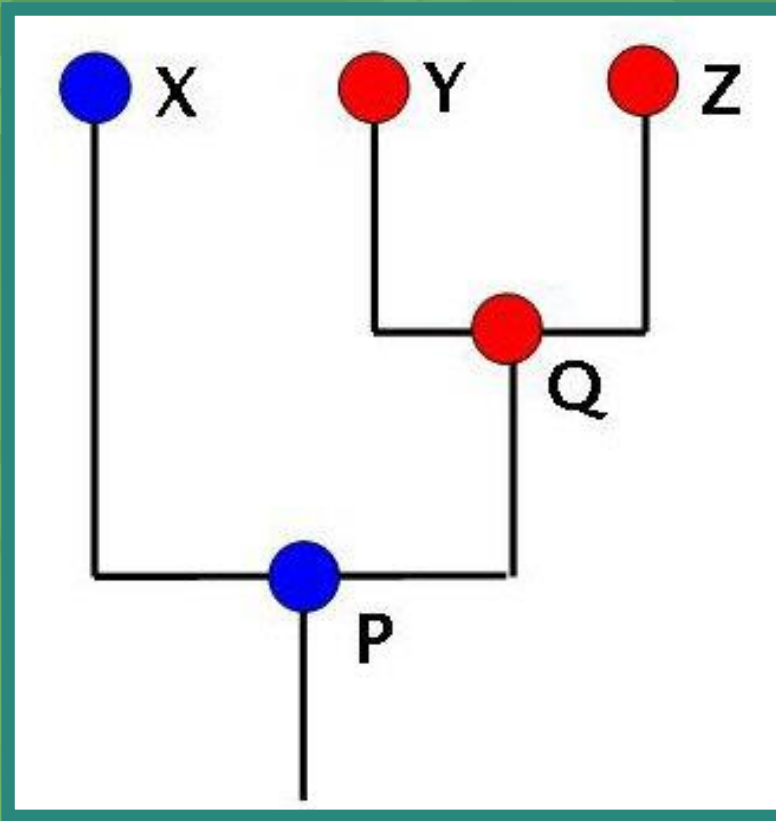
The choice is yours:



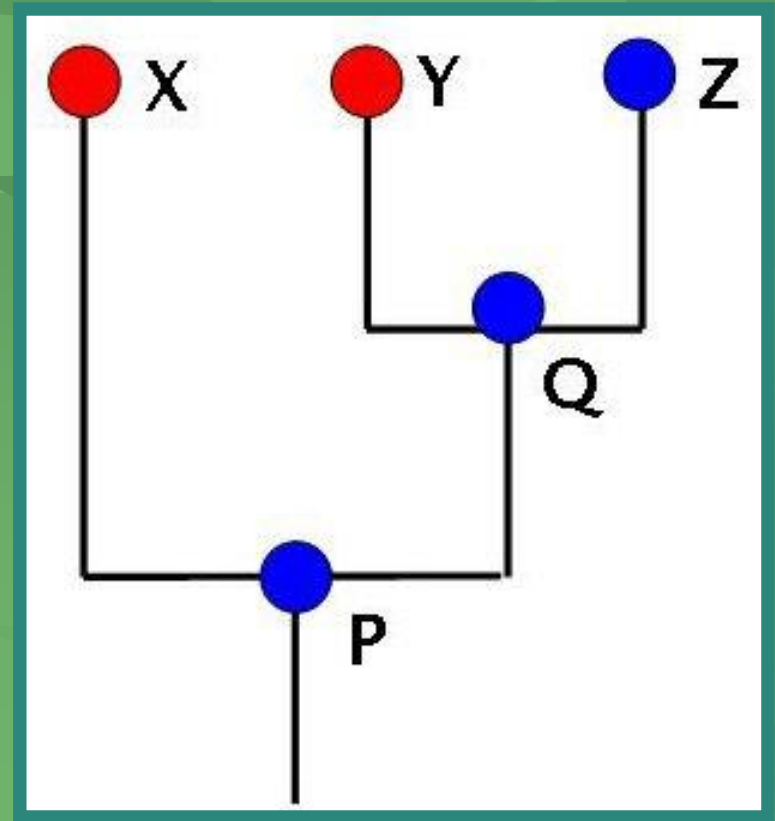
LIMITATIONS OF MOLECULAR DATA

- INCONGRUITY
- ‘NO DIFFERENCE’
- LEVEL OF DISCRIMINATION
- **PARAPHYLY CONTROVERSY**

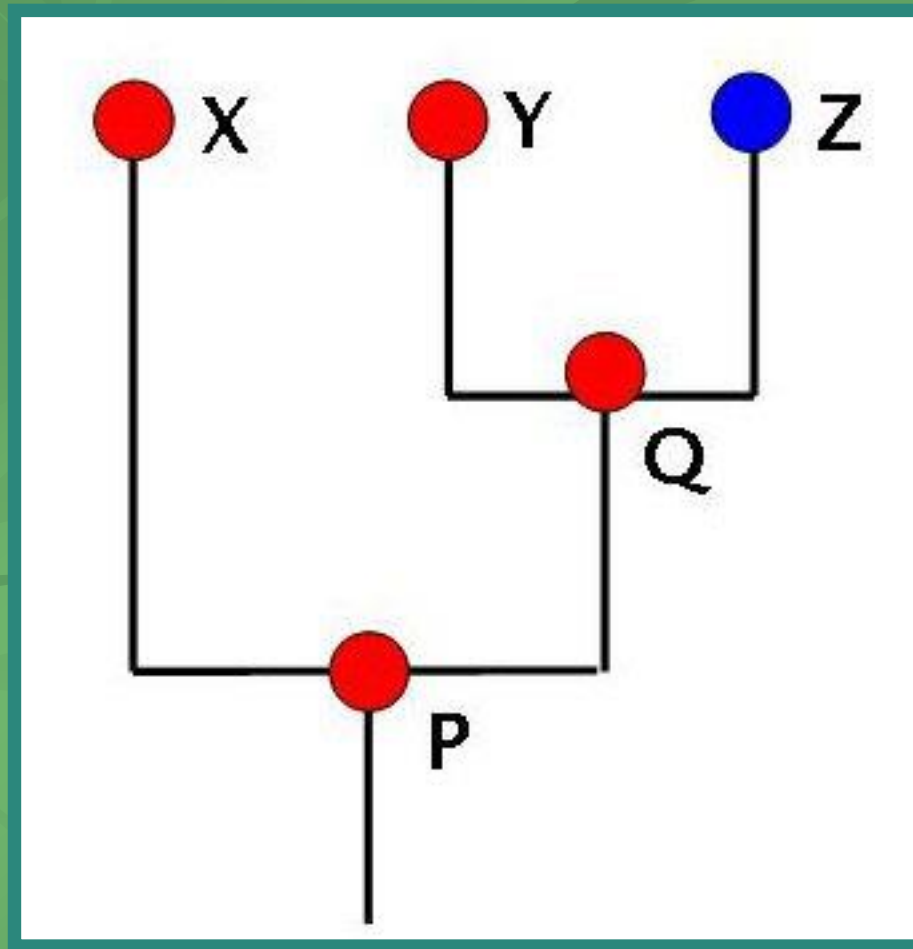
YZ MONOPHYLETIC



XY POLYPHYLETIC



XY PARAPHYLTYIC



LIMITATIONS OF MOLECULAR DATA

- INCONGRUITY
- ‘NO DIFFERENCE’
- LEVEL OF DISCRIMINATION
- PARAPHYLY CONTROVERSY
- **PROBLEM OF POLYPLOIDY**

FLORAS

FUTURE PROGRESS

- EXPLORE NEW METHODS OF PRESENTATION
- INCORPORATE NEW DATA AND UPDATE OLD DATA

WHAT YOU CAN DO

- **THINK BEYOND PUTTING DOTS ON MAPS AND TAKING PHOTOGRAPHS**

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- **KNOW THE LITERATURE**

WHAT YOU CAN DO

- THINK BEYOND PUTTING DOTS ON MAPS AND TAKING PHOTOGRAPHS
- KNOW THE LITERATURE
- **BE CRITICAL OF EVERYTHING YOU READ OR ARE TOLD**

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- THINK BEYOND PUTTING DOTS ON MAPS AND TAKING PHOTOGRAPHS
- KNOW THE LITERATURE
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- **CHECK IT UP YOURSELF BY OBSERVATION AND EXPERIMENT**

WHAT YOU CAN DO

- THINK BEYOND PUTTING DOTS ON MAPS AND TAKING PHOTOGRAPHS
- KNOW THE LITERATURE
- BE CRITICAL OF EVERYTHING YOU READ OR ARE TOLD
- CHECK IT UP YOURSELF BY OBSERVATION AND EXPERIMENT
- **PRESERVE A VOUCHER SPECIMEN**

WHAT YOU CAN DO

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- KNOW THE LITERATURE
- BE CRITICAL OF EVERYTHING YOU READ OR ARE TOLD
- CHECK IT UP YOURSELF BY OBSERVATION AND EXPERIMENT
- PRESERVE A VOUCHER SPECIMEN
- **TELL THE REST OF US WHAT YOU FIND**