Introduction to and use of Dichotomous Keys

DICHOTOMOUS KEY OF QUOZES-INDENTED VERSION (A)

A. Specimen has a phrened head
- B. Specimen has a single phren on head
  - C. Specimen has single caudus
    - D. Body pattern absent……*Simpleton plainus*
    - DD. Body pattern present
      - E. Pattern is asymmetrical……..*Sylvestris lopsidus*
      - EE. Pattern is symmetrical
        - F. Spotted pattern…….……..……*Sylvestris spoticus*
        - FF. Lineated pattern ….……*Sylvestris lineus*
  - CC. Specimen has more than a single caudus
    - D. Number of caudii 2
      - E. Cilia not present on caudii…….……..*Sylvestris dipodnoncilia*
      - EE. Cilia present on caudii…….……..…..*Sylvestris dipodcilia*
    - DD. More than 2 caudii
      - E. Number of caudii 3
        - F. Cilia not present……*Sylvestris multipodus*
        - FF. Cilia present……*Sylvestris multipodhairus*
      - EE. More than 3 caudii…….……...……...…….*Dianus multicaudus*
- BB. Specimen has multiple phrens on head
  - C. Specimen has two phrens……..…….*Duophrend ineedus*
  - CC. Specimen has more than two phrens
    - D. Specimen has single caudus
      - E.Body pattern absent……..……....*Multiphrens plainus*
      - EE. Body pattern present
        - F. Spotted pattern…….*Multiphren spoticus*
        - FF. Lineated pattern……*Multiphren lineus*
          - G. Symmetrical pattern…..……..…*var. symmetricus*
          - GG. Asymmetrical pattern…..……..……*var. irregularis*
    - DD. Specimen has multiple caudii
      - E. Body pattern absent…….……*Multiphren lostus*
      - EE. Body pattern present
        - F. Spotted pattern…..……..……*Multiphren glamorus spoticus*
        - FF. Lineated pattern……..…….*Multiphren glamorus lineus*
          - G. Symmetrical pattern……...*var. symmetricus*
          - GG. Asymmetrical pattern…… ……...*var. irreg.ularis*

AA. Specimen has split head
- B. Specimen has single caudus
  - C. Body pattern absent……..……*Schizolobus ordinaries*
  - CC. Body pattern present……....……*Schizolobus dandi*
    - D. Pattern symmetrical……...……. *var. eveness*
    - DD, Pattern not symmetrical
      - E. Pattern of lines……...……*var. lineus*
      - EE. Pattern of spots…..……..……*var. spotticus*
- BB. Specimen has multiple caudii
  - C. Cilia present on caudii…….*.....Schizolobus hairilimbi*
  - CC. Cilia absent on caudi……*Schizolobus projbaldi*

INTRODUCTION TO AND USE OF DICHOTOMOUS KEYS
DICHOTOMOUS KEY OF QUOZES NON-INDENTED VERSION (B)

1. If specimen has phrened head, go to ……..……2
   If specimen has split head, go to ……19
2. If specimen has one phren, go to ……..3
   If specimen has more than one phren, go to ……..5
3. If specimen has single caudus, go to ……4
   If specimen has more than single caudus, go to ……..12
4. If specimen has a single phren, go to ……5
   If specimen has multiple phrens ……..……*Multiphren plainus*
5. If specimen has no body pattern, go to ……14
   If specimen has body pattern, go to ……...6
6. If specimen has lineated pattern, go to ……..7
   If specimen has spotted pattern ……..*Sylvestris spoticus*
7. If specimen has single phren, go to ……...9
   If specimen has more than one phren, go to ……..8
8. If specimen has symmetrical body pattern ……*Multiphrens lineus var. symmetricus*
   If specimen has asymmetrical body pattern ……*Multiphren lineus var. irregularis*
9. If specimen has single caudus, go to ……...10
   If specimen has more than one caudus, go to ……..12
10. If specimen has no body pattern ……..……*Simpletonus plainus*
    If specimen has body patter, go to ……...11
11. If specimen has lineated pattern ……...…….*Sylvestris lineus*
    If specimen has a wavy pattern …….*Sylvestriswavus*
12. If specimen has 2 caudii, go to ……13
    If specimen has more than 2 caudii, go to ……...14
13. If specimen has cilia present on caudii ……...*Sylvestris dipodcilia*
    If specimen has no cilia present on caudii ……*Sylvestris dipodnoncilia*
14. If specimen has only 3 caudii, go to ……15
    If specimen has more than 3 caudii, go to ……...16
15. If specimen has cilia present on 3 caudii ……...…*Sylvesti multipodhairus*
    If specimen has no cilia present on caudii ……..…….*Sylvesti multipodus*
16. If specimen has a single phren, go to ……..17
    If specimen has 2-6 phrens …….....*Multiphren lostus*
17. If specimen has body pattern, go to ……18
    If specimen has no body pattern ……..*Dianus mulitcaudus*
18. If specimen has a wavy pattern ……..…*Plenticaudii undulata*
    If specimen has spotted pattern ……...…*Plenticaudii blotcho*
19. If specimen has single caudus, go to ……...20
    If specimen has more than one caudus, go to ……..23
20. If specimen has body pattern, go to ……21
    If specimen has no body pattern ……*Schizolobus ordinaries*
21. If specimen has symmetrical pattern ……...……..*Schizolobus dandi var. eveness*
    If specimen has asymmetrical pattern, go to ……...22
22. If specimen has a body pattern of spots ……...…*Schizolobus dandi spoticus*
    If specimen has a body pattern of lines …….....*Schizolobus dandi lineus*
23. If specimen has cilia present on caudii ……..*Schizolobus hairilimbi*
    If specimen has no cilia present on caudii …….*Schilzolobus projbaldi*

Name: _____

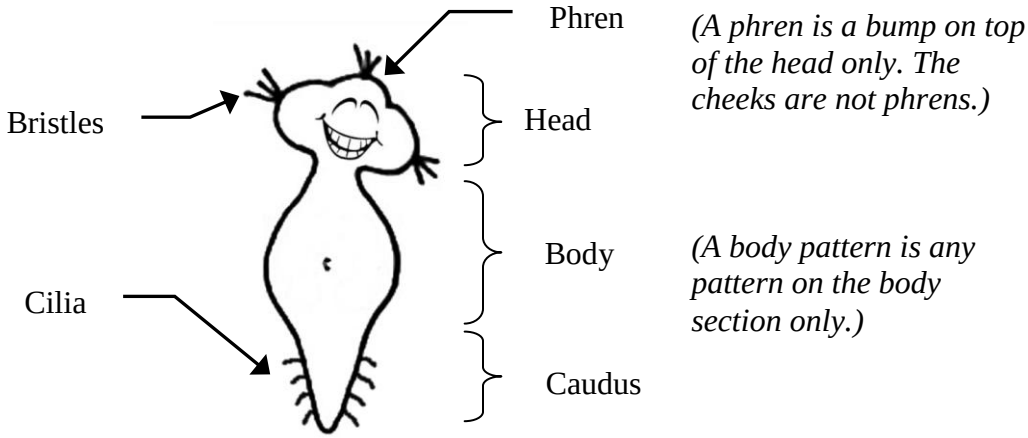
INITRODUCTION TO AN USE OF DICHOTOMOUS KEYS
Student Worksheet and Guide

Classification or Taxonomic keys are used by scientists and naturalists to identify living organisms in the wild and in the laboratory. Keys are developed by using similarities and differences in the characteristics (physical, behavioral, and more recently, biochemical) of specimens under study. These variations (either-or choices) are used to develop dichotomous keys. The complexity of the dichotomous keys is determined by the number of specimens to be identified. Several formats can be used to make keys. The two formats used in this lab activity are generally used for larger samples. The first key, indicated by (A) at the top of the page demonstrates an indented format. The second key indicated by (B) is the non-indented format.

In this activity, you will:

1. First observe the physical characteristics of the eight (8) specimens in your sample. Refer to Figure 1 below to familiarize yourself with specific terms describing this "species".

FIGURE 1



2. Using the illustrated specimen cards provided, record the letters of the DICHOTOMOUS KEY OF QUOZES-INDENTED VERSION (A) as they are read while following the key characteristics of each specimen. For example, "Specimen IX" A, B, DD, EE…. and so on until the key reveals the scientific name and variety. Record letters used and scientific name in areas indicated in the chart below.

DICHOTOMOUS KEY OF QUOZES-INDENTED VERSION (A)

Specimen Number	Letters Used	Scientific Name (including variety if necessary)
I		
II		
III		
IV		
V		
VI		
VII		
VIII		

DICHOTOMOUS KEY OF QUOZES-NONINDENTED VERSION (B)

Specimen Number	Letters Used	Scientific Name (including variety if necessary)
I		
II		
III		
IV		
V		
VI		
VII		
VIII		

SUMMARY QUESTIONS

1. What are the physical characteristics that all specimens have in common? _____

_____

2. Which key was easiest to read and follow? _____ Why? _____

_____

3. What are the advantages of using a classification key when identifying organisms? _____

_____

_____

4. What characteristics of these specimens were most useful for keying them? _____

_____

5. Do you think it would be easier to identify actual specimens, rather that these illustrated specimens, by using a dichotomous key? _____ Explain _____

_____

6. Draw below, what you think the following specimens would look like based on the information in the key.

Note: It will be helpful to use one of the keys and work backwards from the scientific name!

Sylvesti multipodhairus

Sylvesti dipodcilia

Name: _____

Terms:

Asymmetrical – each side of an imaginary line dividing parts that are not the same.
Bristles – three straight hair-like projections on anterior and sides of head section.
Caudus – tail-like projection
Caudii – (plural) – more than one tail-like projection
Cilia – short, hair-like outgrowths.
Ciliated – with cilia
Dichotomous – division into two parts or opposite categories
Lineated – with lines or stripes
Phren – bump on the head portion
Split head – no phrens; v-shaped at the top of the head.
Symmetrical – similar form or arrangement on either side of a dividing line or plane.
Var - **variety** (abbreviated **var.**; in Latin: *varietas*) is a taxonomic rank below that of species