Student's Name _____ Class _____ Date_____

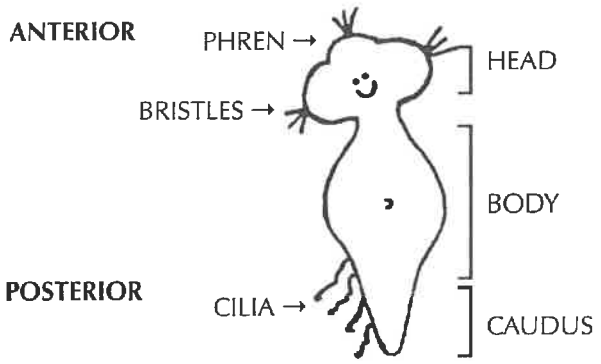
LAB-AIDS® #51 INTRODUCTION TO AND USE OF DICHOTOMOUS KEYS
Student Worksheet and Guide

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 key 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 card demonstrates an indented format. The second key indicated by (B) is the non-indented format.

In this lab activity you will:

1. First observe the physical characteristics of the eight (8) specimens in your sample (illustrated specimen cards provided by your teacher). Refer to Figure 1 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
I		
II		
III		
IV		
V		
VI		
VII		
VIII		

When you have completed the chart above, use the specimen cards with the DICHOTOMOUS KEY OF QUOZES-NON-INDENTED VERSION (B). Record numbers in the chart on back as they are read and indicate scientific name and variety.

DICHOTOMOUS KEY OF QUOZES-INDENTED VERSION (B)

Specimen Number	Numbers Used	Scientific name
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 than these illustrated specimens, by using a dichotomous key? _____ Explain your answer _____

6. What are the limitations of keys and taxonomic systems? _____

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

Sylvesti multipodhairus	Sylvesti dipodcilia

8. Which specimens are included in the Non-indented version of the dichotomous keys, but not in the Indented version?

LAB-AIDS® #51 INTRODUCTION TO AND USE OF DICHOTOMOUS KEYS
DICHOTOMOUS KEY OF QUOZES-INDENTED VERSION (A)

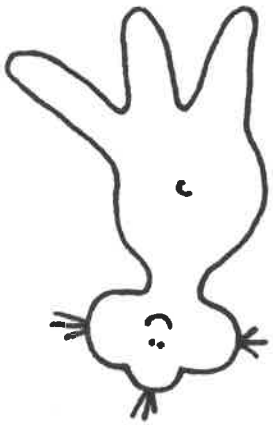
A. Specimen has a phrened head
  B. Specimen has a single phren on head
    C. Specimen has single caudus
      D. Body pattern absent ..... **Simpletonus plainus**
      DD. Body pattern present
        E. Pattern is asymmetrical
        EE. Pattern is symmetrical
          F. Spotted pattern ..... **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 ..... **Sylvesti dipodnoncilia**
        EE. Cilia present on caudii ..... **Sylvesti dipodcilia**
      DD. More than 2 caudii
        E. Number of caudii 3
          F. Cilia not present ..... **Sylvesti multipodus**
          FF. Cilia present ..... **Sylvesti 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 ..... **Multphren 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. irregularis**
AA. Specimen has split head
  B. Specimen has single caudus
    C. Body pattern absent ..... **Schizolobus ordinarius**
    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. spoticus**
  BB. Specimen has multiple caudii
    C. Cilia present on caudii ..... **Schizolobus hairilimbi**
    CC. Cilia absent on caudii ..... **Schizolobus projbaldi**

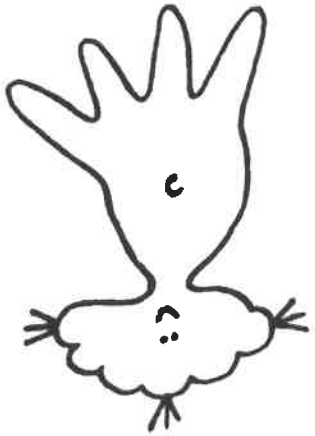
LAB-AIDS® #51 INTRODUCTION TO AND USE OF DICHOTOMOUS KEYS
DICHOTOMOUS KEY OF QUOZES-NON-INDENTED VERSION (B)

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 a single phren, go to 9
   If specimen has more than one phren, go to 8
8. If specimen has symmetrical body pattern ..... **Multiphren 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 pattern, go to 11
   If specimen has lineated pattern ..... **Sylvestris lineus**
   If specimen has a wavy pattern ..... **Sylvestris wavus**
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 ..... **Sylvesti dipodcilia**
   If specimen has no cilia present on caudii ..... **Sylvesti 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 multicaudus**
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 ordinarius**
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 ..... **Schizolobus projbaldi**

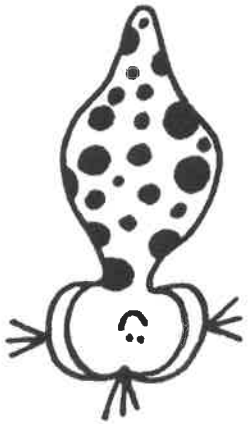
III



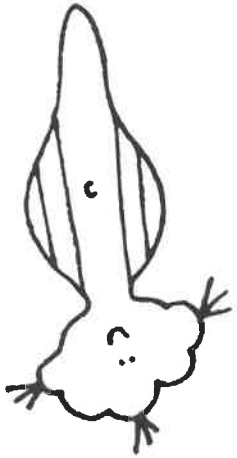
ΛI



IIIΛ



I



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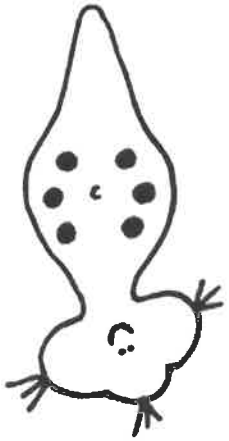

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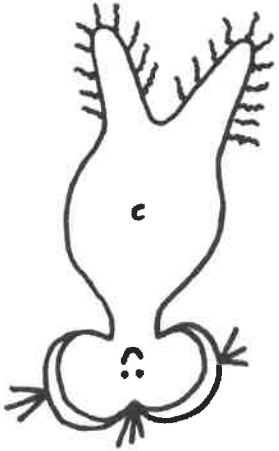
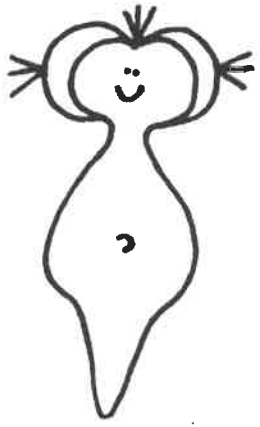


VI



V