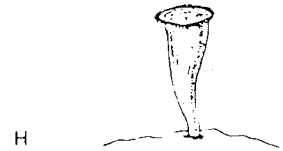
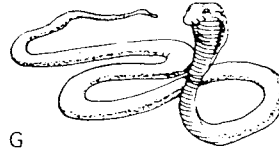
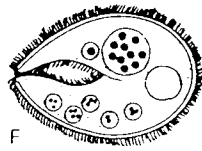
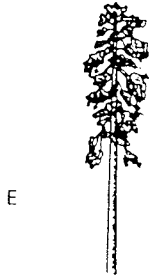
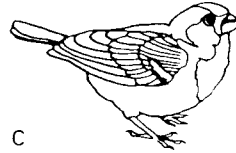
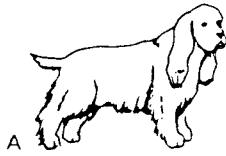


The Classification Key

When biologists find life forms that they cannot identify, they use a classification key that aids identification. It is a kind of road map by which a person can find the scientific name of an organism.

Study the diagrams below showing various organisms. Then determine the scientific and common names of each of these organisms by using the key below. For each numbered item, you have a choice between a and b. Decide if a or b more accurately fits the illustration, and then follow the letter's accompanying direction. After determining the scientific name of the organism, write the identifying letter in the blank at the right.



1a. organism with two or four functional legs . . . go to **2**

1b. organism without two or four legs go to **3**

2a. organism without wings *Canis familiaris* dog _____

2b. organism with wings *Passer domesticus* house sparrow _____

3a. organism is unicellular go to **4**

3b. organism is multicellular go to **5**

4a. organism swims freely in water *Balantidium* sp. balantidium _____

4b. organism anchored to substrate *Stentor* sp. stentor _____

5a. organism is heterotrophic go to **6**

5b. organism is autotrophic go to **7**

6a. organism lives in oceans *Monodon monoceros* narwhal _____

6b. organism lives on land *Ophiophagus hannah* king cobra _____

7a. organism is a tree *Pinus ponderosa* ponderosa pine _____

7b. organism is an herb *Taraxicum officinale* dandelion _____

STUDY SHEET II Using an Identification Key

Use the *Key to Six Flesh-Eating Mammals* to identify the illustrated flesh-eating animals. Write the animal's common and scientific name in the blanks under each illustration.

Key to Six Flesh-Eating Mammals

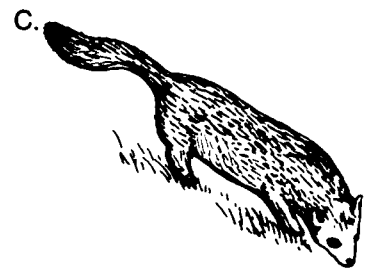
- 1a. If the animal's body is black with white stripes or spots on its back, go to # 2.
 1b. If the animal's body is not black with stripes or spots, go to # 3.
 2a. If a white stripe goes down center of the animal's face, back, and tail, it is a striped skunk, *Mephitis mephitis*.
 2b. If the animal has a white spot on its forehead and broken stripes and spots on body, it is a spotted skunk, *Spilogale putoris*.
 3a. If the animal's markings include a black mask across the eyes and cheeks and rings around the tail, it is a raccoon, *Procyon lotor*.
 3b. If the animal's face and tail are not marked, go to # 4.
 4a. If the animal's weight is more than 100 kilograms and its length is 2 meters or more, it is a black bear, *Euarctos americanus*.
 4b. If the animal's weight is less than 25 kilograms and its length is less than 2 meters, go to # 5.
 5a. If the animal's tail is long with a black tip, it is a long-tailed weasel, *Mustela frenata*.
 5b. If the animal's tail is short and bushy, it is a badger, *Taxidea taxus*.



Common name _____
 Scientific name _____



Common name _____
 Scientific name _____



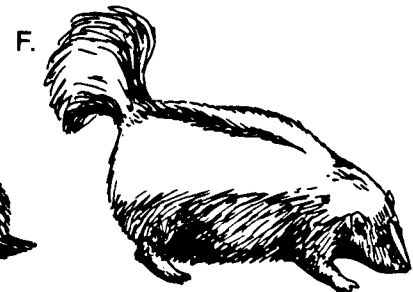
Common name _____
 Scientific name _____



Common name _____
 Scientific name _____

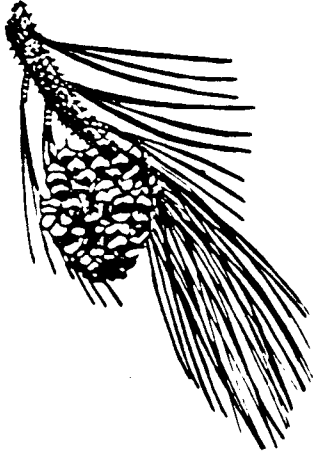


Common name _____
 Scientific name _____



Common name _____
 Scientific name _____

A.



B.



C.



D.



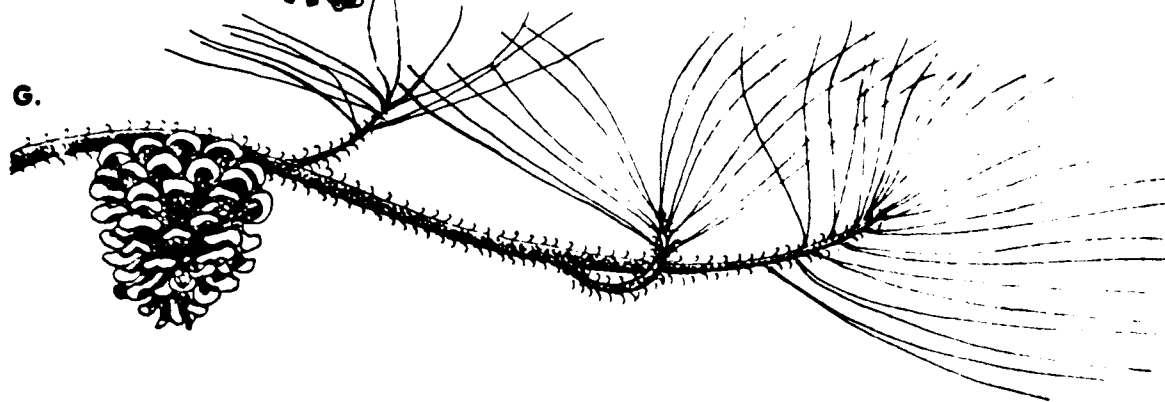
E.



F.



G.



Activity

Pine Trees

Purpose

To identify pine trees using an identification key.

Materials

- pencil and paper

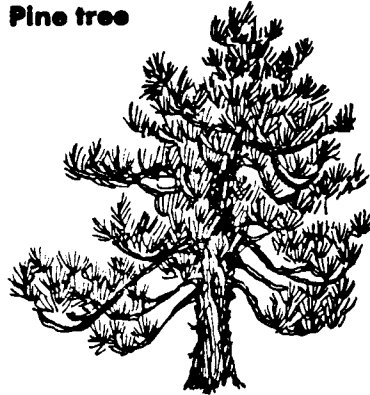
Procedure

1. Look at the pine needles and cone in group A.
2. Begin at step 1 of the key and identify the tree to which these needles and cone belong.
3. On your paper, write *Tree A*, followed by its common name and scientific name. Capitalize the first letter of the genus name. Underline both words of the scientific name.
4. Use the same procedure to identify each species of pine tree whose needles and cones are pictured on the next page.

Analysis

1. How many species did you identify?
2. How many genres did you identify?
3. Why is it important to always start at step 1?

Pine tree



Pine bough



Bundle of five needles



Cone with prickles



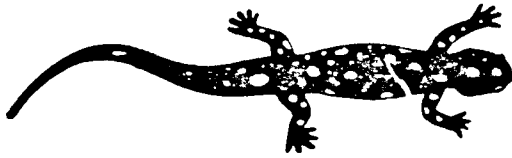
Identification Key for Pines

- 1a. If the tree has needles in bundles of 5, go to step 2.
- 1b. If the tree has needles in bundles of less than 5, go to step 3.
- 2a. If the tree has long needles and long cones, it is a white pine, *Pinus strobus*.
- 2b. If the tree has short needles and short cones with prickles, it is a bristlecone pine, *Pinus aristata*.
- 3a. If the tree has needles in bundles of 2, go to step 4.
- 3b. If the tree has needles in bundles of 3, go to step 6.
- 4a. If the tree has long needles and small cones without prickles, it is a red pine, *Pinus resinosa*.
- 4b. If the tree has short needles, go to step 5.
- 5a. If the tree has small, curved cones, it is a jack pine, *Pinus banksiana*.
- 5b. If the tree has small cones with prickles, it is a lodgepole pine, *Pinus contorta*.
- 6a. If the tree has long needles and small cones with prickles, it is a pond pine, *Pinus serotina*.
- 6b. If the tree has long needles and large cones with prickles, it is a ponderosa pine, *Pinus ponderosa*.

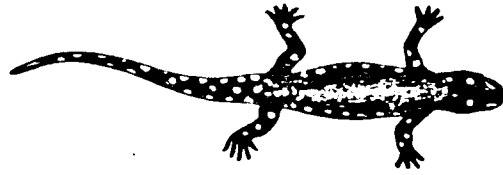
This key can only be used successfully for the seven pines described here.

PART B Using a Classification Key

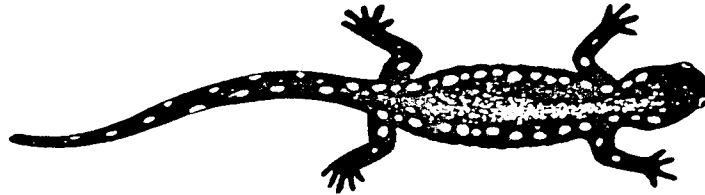
1. Examine the drawing of salamander 1 in Figure 3-2.



1 _____



2 _____



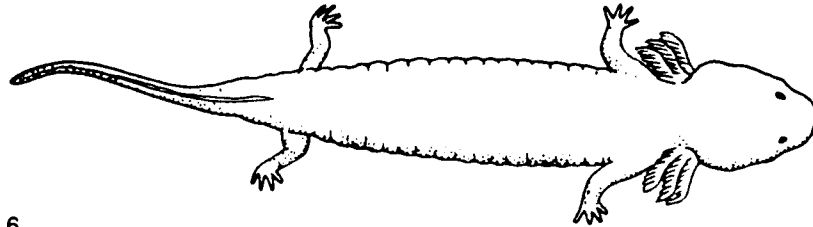
3 _____



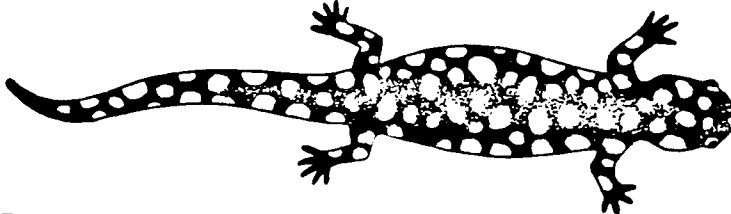
4 _____



5 _____



6 _____



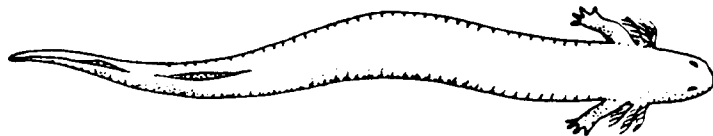
7 _____



8 _____



9 _____



10 _____



11 _____

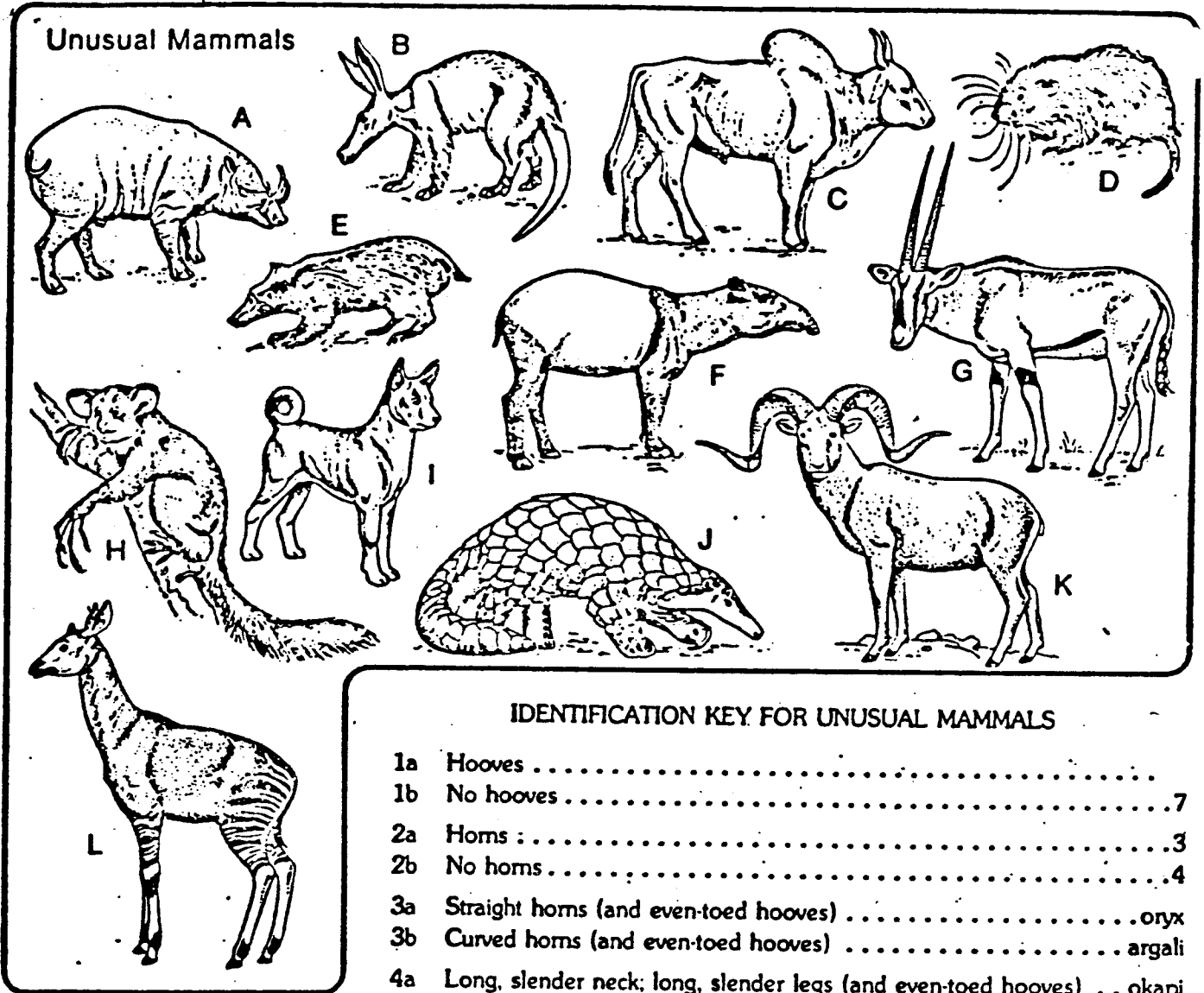
FIGURE 3-2 Types of Salamanders

2. Read statements 1a and 1b in the classification key in Figure 3-3. One of these statements describes salamander 1; the other statement does not. Follow the directions in statements 1a and 1b until salamander 1 has been identified.

FIGURE 3-3 Classification Key to Certain Salamanders

1	a Hind limbs absent	<i>Siren intermedia</i> , siren
	b Hind limbs present	Go to 2
2	a External gills present in adults	<i>Necturus maculosus</i> , mud puppy
	b External gills absent in adults	Go to 3
3	a Large size (over 7 cm long in Figure 3-2)	Go to 4
	b Small size (under 7 cm long in Figure 3-2)	Go to 5
4	a Body background black, large white spots irregular in size and shape completely covering body and tail	<i>Ambystoma tigrinum</i> , tiger salamander
	b Body background black, small round white spots in a row along each side from eye to tip of tail	<i>Ambystoma maculatum</i> , spotted salamander
5	a Body background black with white spots	Go to 6
	b Body background light color with dark spots and/or lines on body	Go to 7
6	a Small white spots on a black background in a row along each side from head to tip of tail	<i>Ambystoma jeffersonianum</i> , Jefferson salamander
	b Small white spots scattered throughout a black background from head to tip of tail	<i>Plethodon glutinosus</i> , slimy salamander
7	a Large irregular black spots on a light background extending from head to tip of tail	<i>Ambystoma opacum</i> , marbled salamander
	b No large irregular black spots on a light background	Go to 8
8	a Round spots scattered along back and sides of body, tail flattened like a tadpole	<i>Triturus viridescens</i> , newt
	b Without round spots and tail not flattened like a tadpole	Go to 9
9	a Two dark lines bordering a broad light middorsal stripe with a narrow median dark line extending from the head onto the tail	<i>Eurycea bislineata</i> , two-lined salamander
	b Without two dark lines running the length of the body	Go to 10
10	a A light stripe running the length of the body and bordered by dark pigment extending downward on the sides	<i>Plethodon cinereus</i> , red-backed salamander
	b A light stripe extending the length of the body, a marked constriction at the base of the tail	<i>Hemidactylium scutatum</i> , four-toed salamander

Examine the unusual mammals that are pictured on this page. Use the classification key to identify the mammals, and record them in the chart on the lower left.



IDENTIFICATION KEY FOR UNUSUAL MAMMALS

- 1a Hooves 7
- 1b No hooves 7
- 2a Horns 3
- 2b No horns 4
- 3a Straight horns (and even-toed hooves)oryx
- 3b Curved horns (and even-toed hooves) argali
- 4a Long, slender neck; long, slender legs (and even-toed hooves) .. okapi
- 4b Short, thick neck 5
- 5a Hump over shoulders (and even-toed hooves and chews a cud).. zebu
- 5b No hump over shoulders 6
- 6a Piglike snout, curving tusks. babirusa
- 6b Long, flexible snout; no tusks (and three-toed hooves). tapir
- 7a Long, thick tail 8
- 7b Short tail 10
- 8a Body covered with large, horny scales pangolin
- 8b Body covered with fur 9
- 9a Short nose, bushy tail, grasping hands aye-aye
- 9b Long nose, tail not bushy aardvark
- 10a Curly tail; large, pointed ears basenji
- 10b Straight tail, short ears 11
- 11a Long nose, long body. teledu
- 11b Short nose, short body (and gnawing teeth). vole

Unusual Mammal	Name
A	
B	
C	
D	
E	
AB	

Unusual Mammal	Name
AC	
AD	
AE	
BC	
BD	
BE	