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MAMMALOLOGY LAB 3 SKIN, HAIR & HORNS

Today's exercise focuses on the skin, hair, and horns of mammals. You will have to make a series of sketches to answer the questions below. They do not have to be intricate or highly artistic, but they must provide enough detail to answer the question.

Hair

1) Examine the study skins of the **skunk** (*Mephitis mephitis*), **fox squirrel** (*Sciurus niger*), and **Norway rat** (*Rattus norvegicus*).

- ◆ Which vibrissae are present on each species (p. 24, fig. 4-5)?

- ◆ What types of hairs are found on each pelage (p. 24)?

- ◆ Are the individual hairs uniform in color?

- ◆ Is the entire pelage uniform in color?

2) Compare the distribution of pigment grains in the hair of a **horse** (*Equus caballus*) and **muskrat** (*Ondatra zibethicus*). Illustrate the differences with a sketch and label the cuticle, medulla, and cortex.



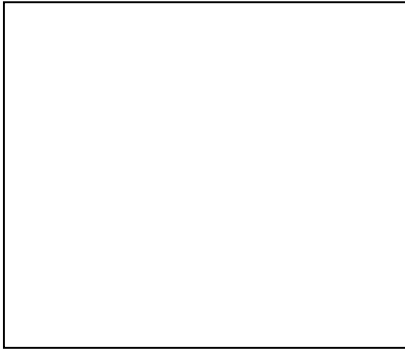
horse



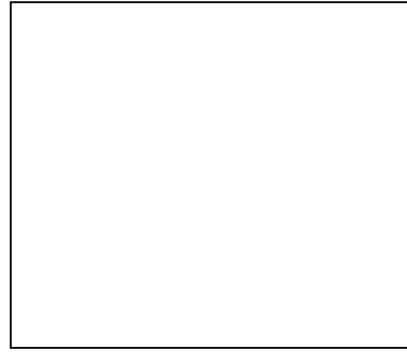
muskrat

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3) Compare the arrangement of external cuticle scales on the hairs of a **cat** (*Felis domesticus*) and a **bat** (Order Chiroptera). Illustrate the differences with a sketch.

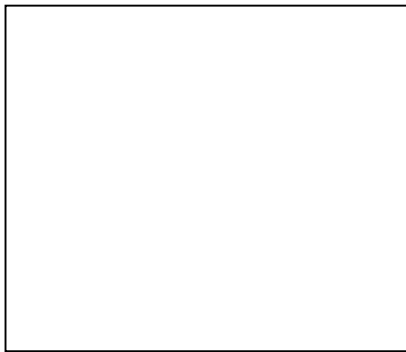


cat

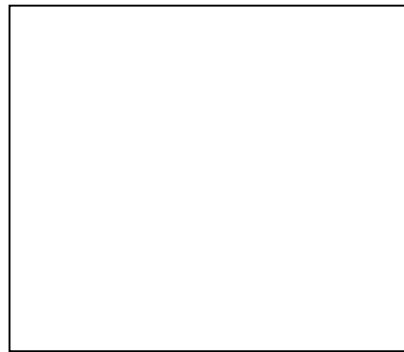


bat

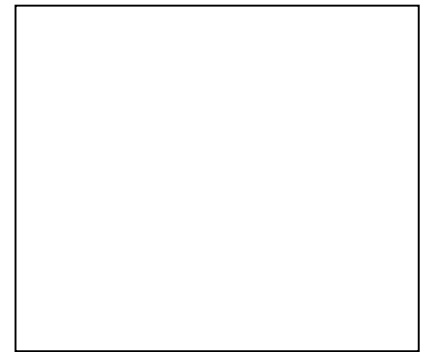
4) Sketch the microscopic internal structure of **rat** (*Rattus* spp.), **cow** (*Bos taurus*), and **rabbit** (*Oryctolagus cuniculus*) hairs. Label the **cuticle**, **cortex**, and **medulla** in your sketches.



rat



cow



rabbit

5) Sketch the microscopic internal structure of **goat** (*Capra hircus*), **opossum** (*Didelphis virginiana*), and **pig** (*Sus scrofa*) hairs. Label the **cuticle**, **cortex**, and **medulla** in your sketches.



goat



opossum



pig

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Skin

6) Examine the skin composite slide containing frog, human, and fish skin.

◆ What differences are apparent?

◆ From top to bottom on the slide, which skins are which?

7) Examine the slide of the human sweat gland.

◆ Is this an example of a **sudiferous** or **eccrine** sweat gland?

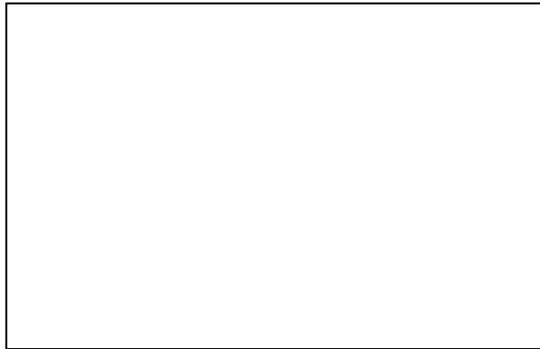
◆ How can you tell?

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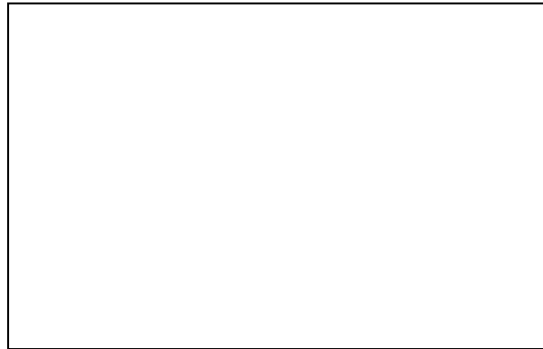
8) Examine the slide of sections through a **squirrel foot pad** and the **human foot pad** or **scalp**. Make a sketch and be sure to label the **dermis** and **epidermis**.

◆ How are they similar?

◆ How are they different?



squirrel



human

9) Examine the slides of the longitudinal section through the **human scalp**. Find a hair follicle, sketch it, and label the following: **hair**, **stratum corneum**, **stratum germinativum** (or **basale**), **hair follicle**, **sebaceous gland**, **arrector pili muscle**, and **papilla**. (p. 22, fig. 4-1)



human scalp

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10) Make a sketch below of the deer antlers in velvet. Identify the **burr**, **brow tine**, **bez tine**, and **crown**.

11) What parts of the horn are identifiable on the **sheep** (*Ovis aries*) skull and **sable antelope** (*Hippotragus niger*) horn?

12) What part of the **cow** (*Bos taurus*) horn do we have in lab?

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MAMMALOLOGY LAB 3
SKIN, HAIR & HORNS
Take Home Question

Distinguish among true horns, pronghorns, antlers, giraffe horns, and rhino horns in terms of their structure and anatomy.

True Horns

Pronghorns

Antlers

Giraffe Horns

Rhino Horn

Then fill out the chart below concerning these five types of “head gear”:

	Who has them? Male/Female?	Are they deciduous?	Are they covered with hair at any point in their development? When?
True Horns			
Pronghorns			
Antlers			
Giraffe Horns			
Rhino Horns			