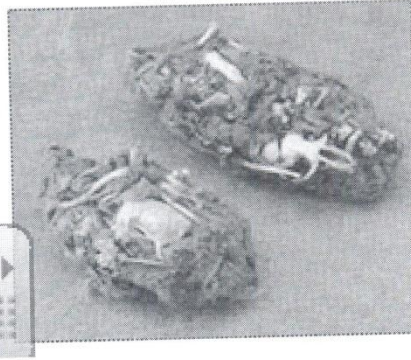


## Introduction to Environmental Science 120

### Owl Pellet Dissection

Some owls swallow small rodents and birds whole. Pellets begin forming within the digestive tract of an owl as soon as the prey is swallowed. Enzymatic juices break down the body tissues in the prey but leave the bony materials and hair or feathers undigested. Depending upon the prey eaten, the undigested portions may include beaks, claws, scales or insect exoskeletons. This type of material has little nutritional value. These materials form a pellet that is surrounded with the hair or feathers of the prey consumed. The pellet is then orally expelled, or regurgitated, 18 to 20 hours after feeding. Each pellet contains on average 3.3 animals. A one-year study of a particular barn owl revealed the following diet:



- 1407 mice
- 143 rats
- 7 bats
- 5 young rabbits
- 375 house sparrows
- 23 starlings
- 54 other birds
- 2 lizards
- 174 frogs
- 25 moths
- 52 crickets

#### **Materials:**

- one owl pellet from the barn owl *Tyto alba*
- dissecting needle/toothpicks and tweezers
- magnifying glass
- white glue
- white paper
- bone chart  
([http://www.biologycorner.com/resources/Owl\\_Pellet\\_Bone\\_Chart\\_grid.pdf](http://www.biologycorner.com/resources/Owl_Pellet_Bone_Chart_grid.pdf))
- mounting sheets

*\*Pellets are sterilized, but be sure to wash your hands, working surface and dissecting tools after the dissection.*

**Procedure:**

1. Place a pellet on a white sheet of paper.
2. Measure and record the length and width of your owl pellet.  
length = \_\_\_\_\_ (1)  
width = \_\_\_\_\_ (1)
3. Carefully examine the exterior of the pellet.  
Do you see signs of fur? \_\_\_\_\_ (1)  
Do you see signs of feathers? \_\_\_\_\_ (1)  
Can you identify other items stuck to the outside of the pellet (grain, pine needles, etc)?  
List items below. (1)

---

---

4. Carefully use a dissecting needle/toothpick to break apart the owl pellet and observe what is within. Separate the bones of the animals from the fur and/or feathers. Clean the bones of debris and sort them according to the type (e.g., skulls, vertebrae, etc.). Clean the skulls as thoroughly as possible since these are the best bones for identifying the prey. Use a magnifying glass and the bone identification chart to help you identify the bones and complete the chart below. (8)

Bone	Number
Skull	
Jaw	
Scapula	
Forelimb	
Hindlimb	
Pelvic Bone	
Rib	
Vertebrae	

5. Organize the bones from each prey by setting each set onto a separate clean and labeled sheet of paper.

6. Use white glue to attach the bones to the correct mounting sheet. (15)

7. Were you able to obtain a complete or nearly complete skeleton? If so, for which organism(s) were you able to do so? (2)

---













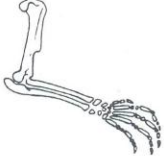
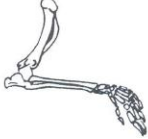














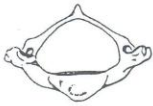






8. Environmentalists are concerned about the accumulation of certain poisons in the body systems of predators. Why do you think owls, eagles, lions and humans are often the most threatened organisms of a community that is exposed to DDT or mercury? (2)

---

---

---

## Owl Pellet Bone Chart

	Rodent	Shrew	Mole	Bird
Skull				
Jaw				
Scapula				
Forelimb				
Hindlimb				
Pelvic Bone				
Rib				
Vertebrae				   

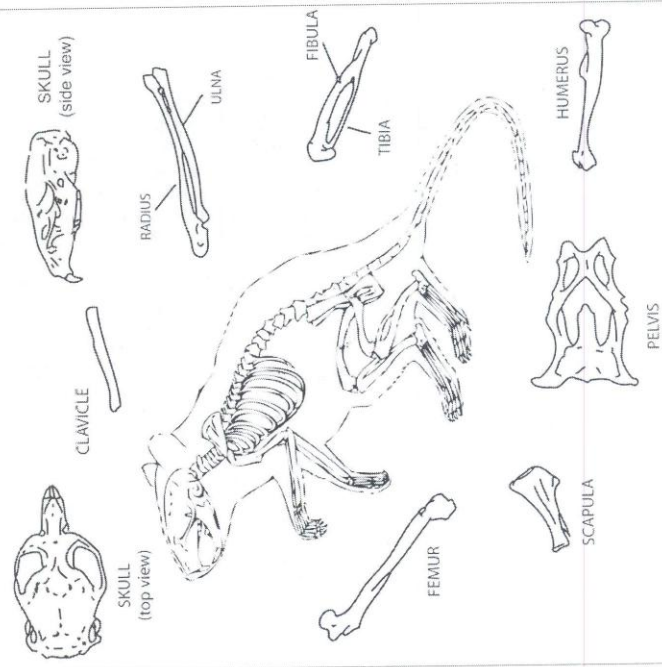
CB290780000

**Carolina Biological Supply Company** 2700 York Road,  
Burlington, North Carolina 27215

OWL BRAND DISCOVERY KITS

# RAT

Microtus

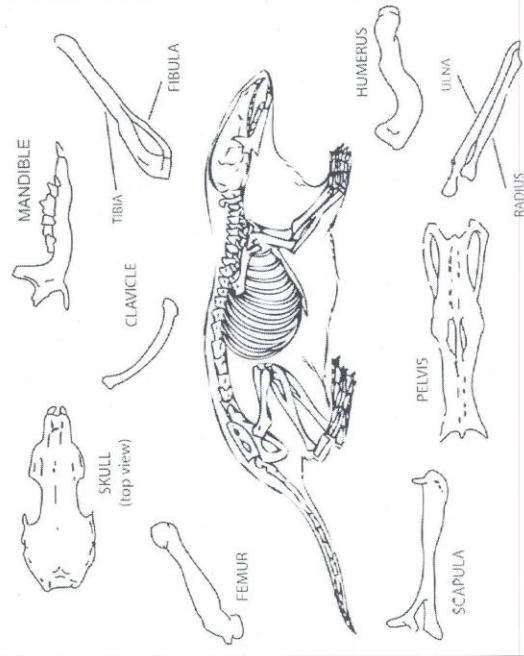


© 2007 Owl Brand Discovery Kits. All rights reserved. Reproduction permission for education purposes only and not for resale or commercial use without specific permission.

OWL BRAND DISCOVERY KITS

# SHREW

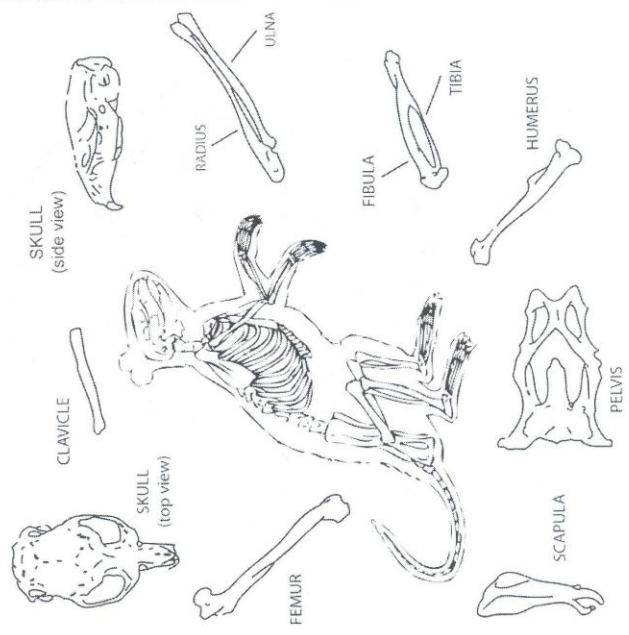
Sorex Vagrans



© 2007 Owl Brand Discovery Kits. All rights reserved. Reproduction permission for education purposes only and not for resale or commercial use without specific permission.

# MOUSE

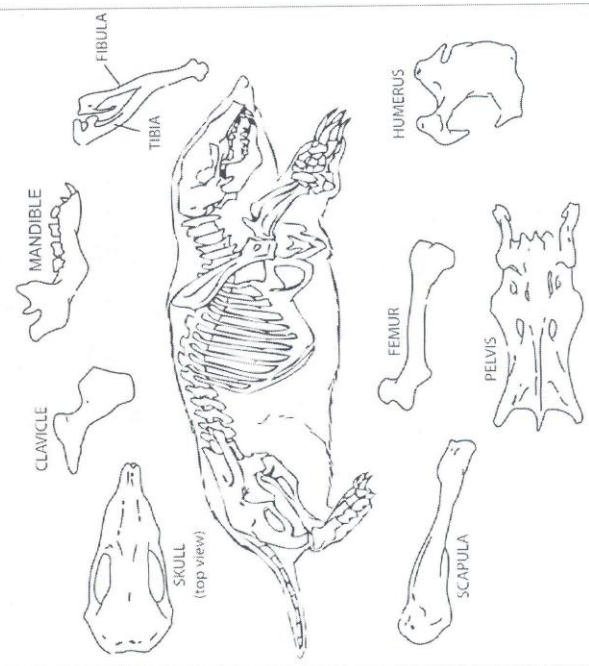
Microtus



© 2007 Owl Brand Discovery Kits. All rights reserved. Reproduction permission for educational purposes only and not for resale or commercial use without specific permission.

# MOLE

Scaparus orarius

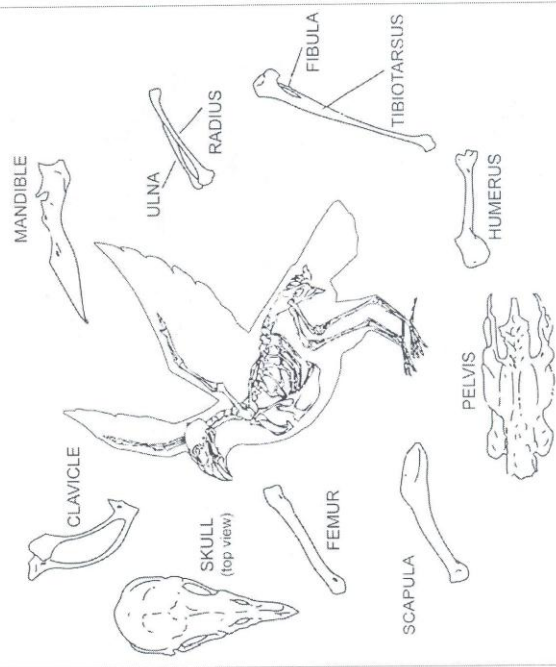


© 2007 Owl Brand Discovery Kits. All rights reserved. Reproduction permission for educational purposes only and not for resale or commercial use without specific permission.

NOTES

OWL BRAND DISCOVERY KITS

# BIRD



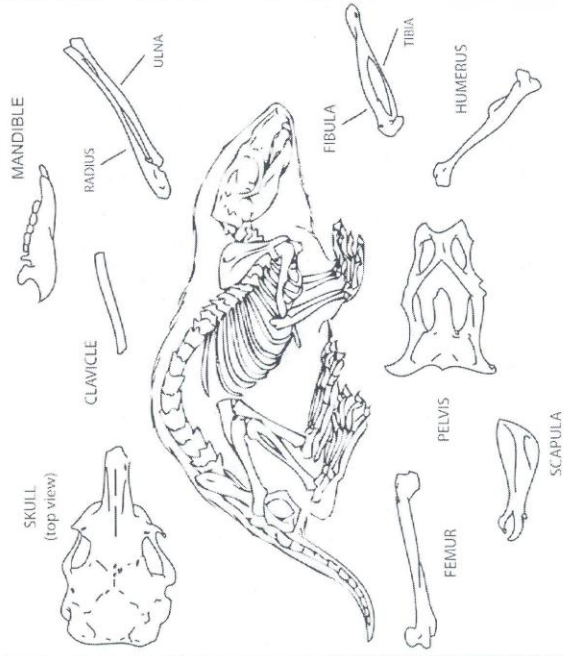
© 2007 Owl Brand Discovery Kits. All rights reserved. Reproduction permission for education purposes only and not for resale or commercial use without specific permission.



© 2007 Owl Brand Discovery Kits. All rights reserved. Reproduction permission for education purposes only and not for resale or commercial use without specific permission.

OWL BRAND DISCOVERY KITS

# VOLE Microtus



© 2007 Owl Brand Discovery Kits. All rights reserved. Reproduction permission for education purposes only and not for resale or commercial use without specific permission.